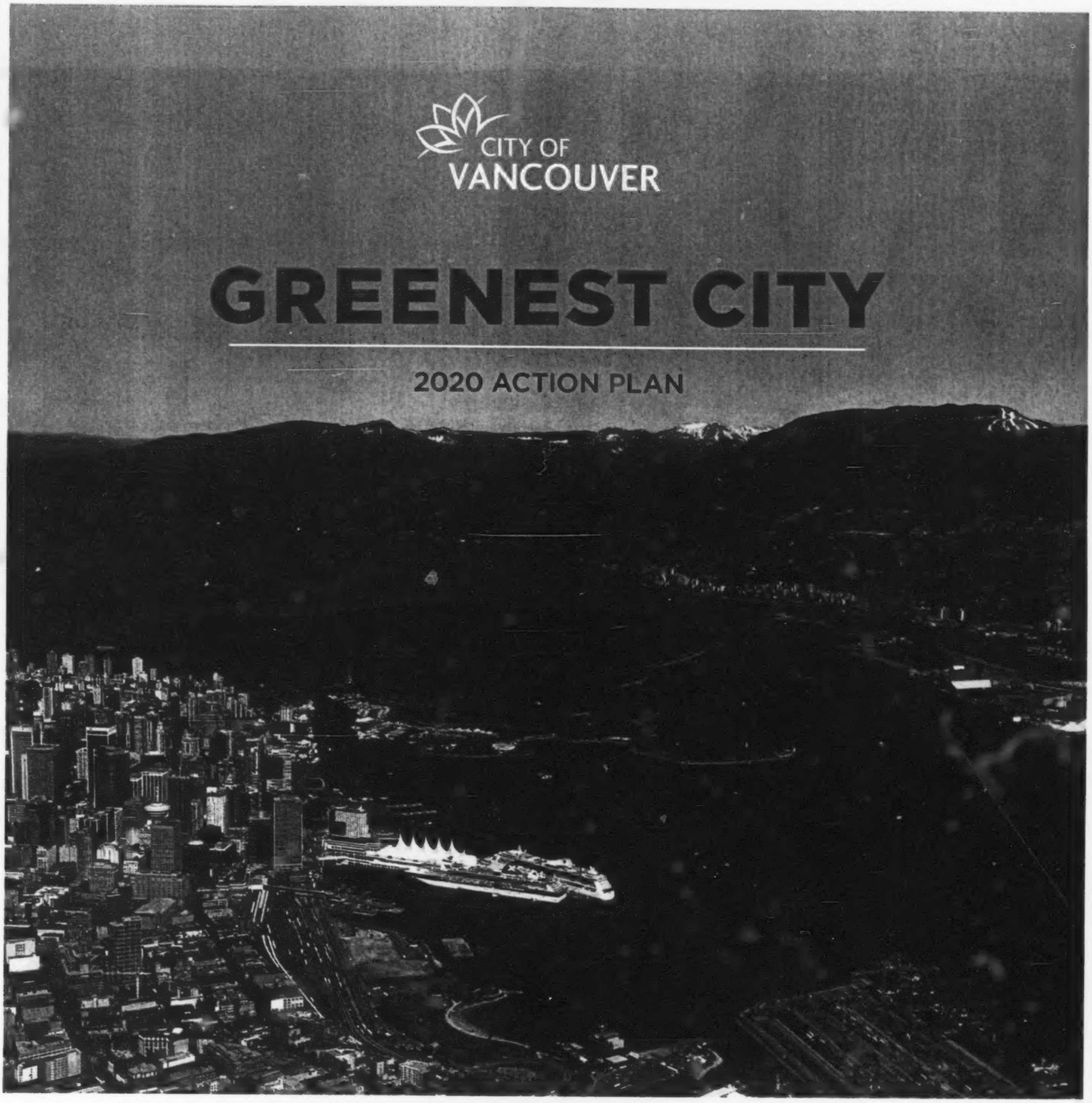
CITY OF
VANCOUVER

GREENEST CITY

2020 ACTION PLAN



VANCOUVER HAS PROVEN THAT A CITY CAN GROW AND PROSPER AND STILL BECOME A GREEN CAPITAL —A GLOBAL LEADER IN ADDRESSING CLIMATE CHANGE.

- Vancouver is set to bring our community-based greenhouse gas emissions down to **5% below 1990 levels**, even as our population has grown by over 27% and jobs have increased by over 18%.
- Vancouver's electricity is generated in British Columbia—93% of it from **renewable sources.** We are also developing neighbourhood-scale **renewable energy projects**. Conversion to renewable sources will create **new green jobs**.
- The City has implemented the **greenest building code** in North America.

Vancouver is rising to meet the **green transportation challenge** by creating compact neighbourhoods with **higher density** to provide easy access to work, shopping and recreation. The City has **shifted investment** to walking, cycling and transit infrastructure instead of building new roads.

...AND THIS GREENEST CITY ACTION PLAN DETAILS HOW WE WILL BECOME THE GREENEST CITY IN THE WORLD BY 2020...

GREENEST CITY 2020
ACTION PLAN

The Greenest City Story 5
Goal 1: Green Economy 10
Goal 2: Climate Leadership 16
Goal 3: Green Buildings 22
Goal 4: Green Transportation 28
Goal 5: Zero Waste 34
Goal 6: Access to Nature 40
Goal 7: Lighter Footprint 46
Goal 8: Clean Water 52
Goal 9: Clean Air 58
Goal 10: Local Food 64
A Conclusion & A Beginning 71
Acknowledgements 72

VANCOUVER HAS PROVEN THAT A CITY CAN GROW AND PROSPER AND STILL BECOME A GREEN CAPITAL —A GLOBAL LEADER IN ADDRESSING CLIMATE CHANGE.

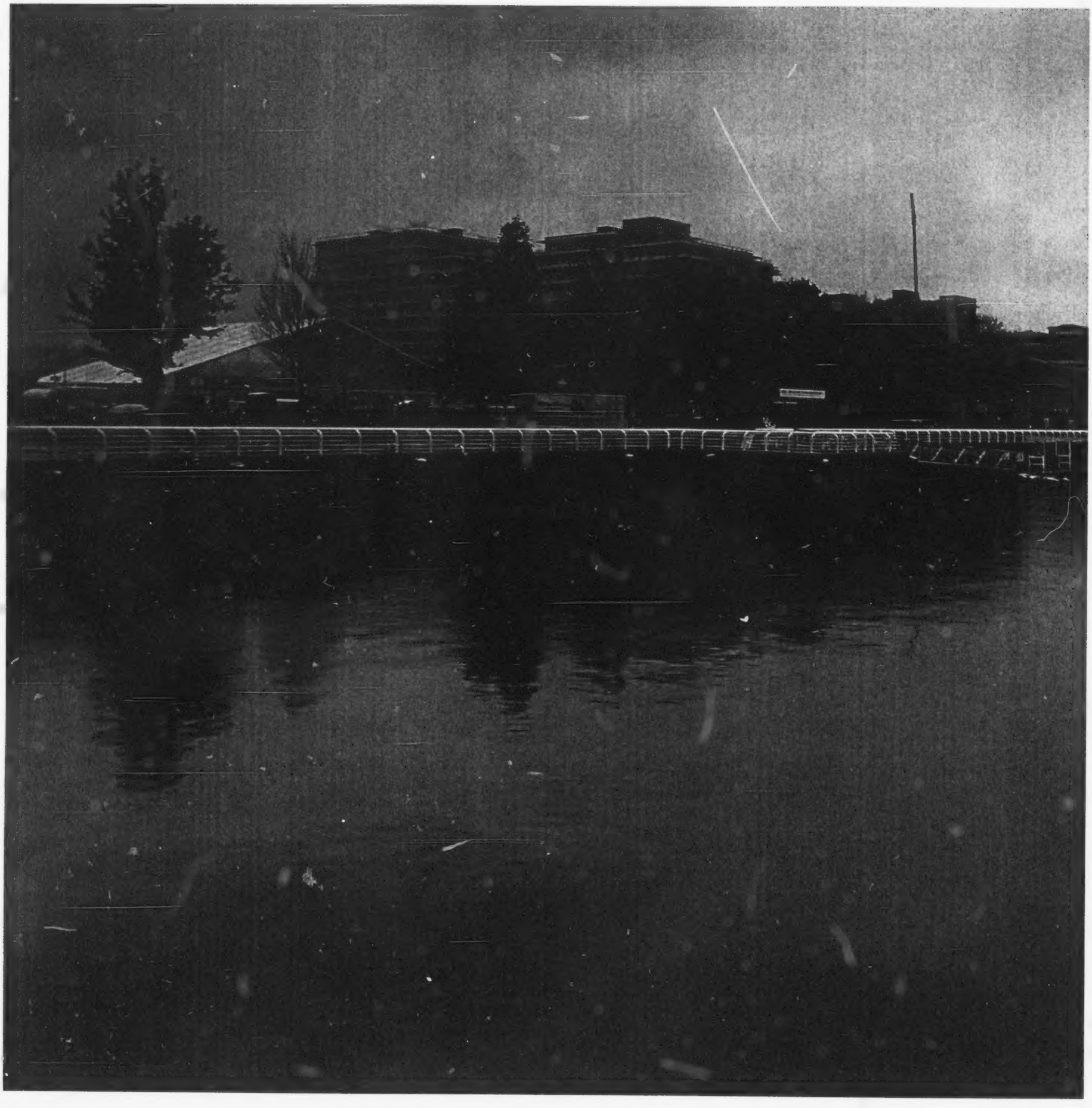
- Vancouver is set to bring our community-based greenhouse gas emissions down to **5% below 1990 levels**, even as our population has grown by over 27% and jobs have increased by over 18%.
- Vancouver's electricity is generated in British Columbia—93% of it from **renewable sources**. We are also developing neighbourhood-scale **renewable energy projects**. Conversion to renewable sources will create **new green jobs**.
- The City has implemented the **greenest building code** in North America.

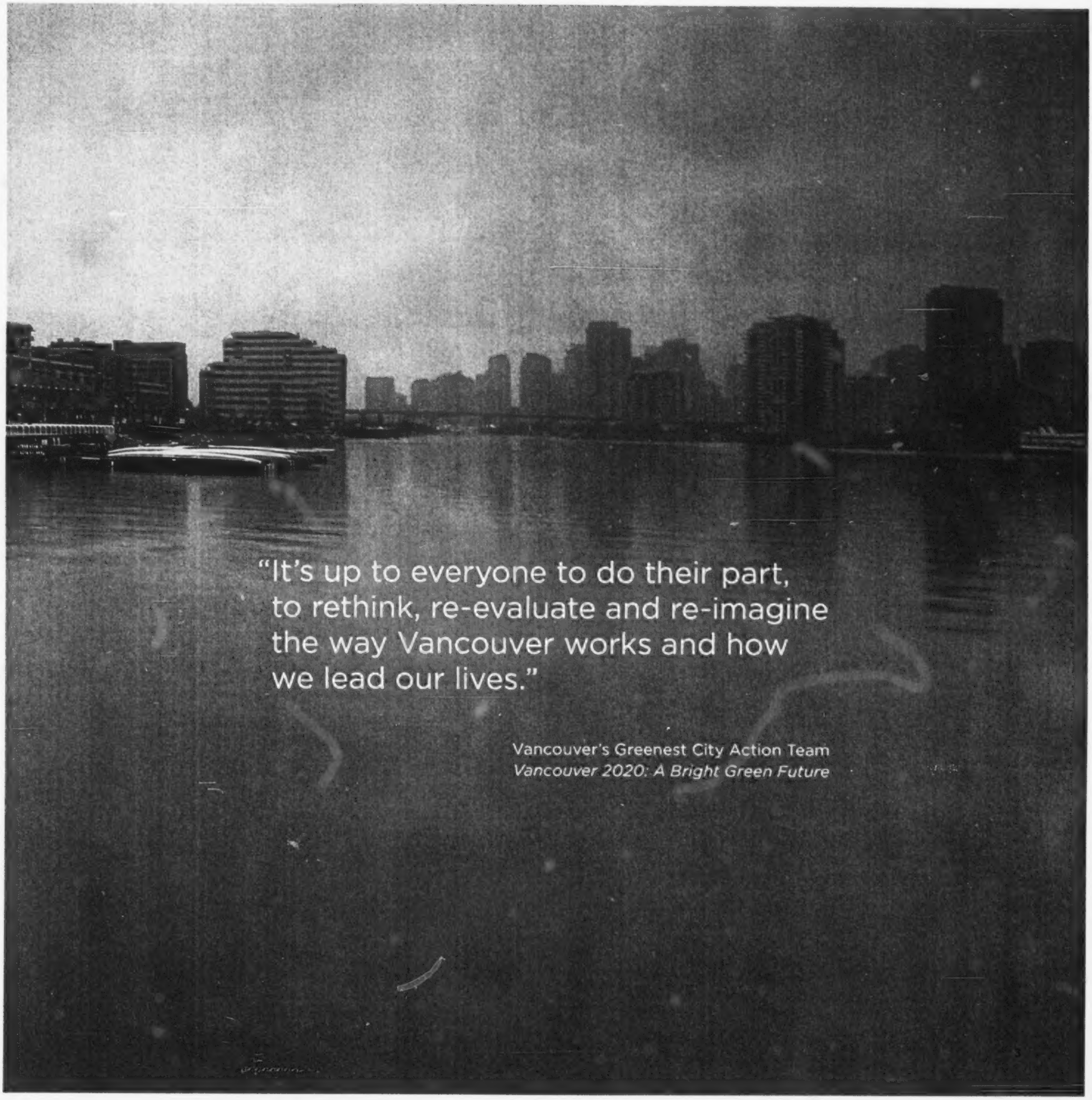
Vancouver is rising to meet the **green transportation challenge** by creating compact neighbourhoods with **higher density** to provide easy access to work, shopping and recreation. The City has **shifted investment** to walking, cycling and transit infrastructure instead of building new roads.

...AND THIS GREENEST CITY ACTION PLAN DETAILS HOW WE WILL BECOME THE GREENEST CITY IN THE WORLD BY 2020...

GREENEST CITY 2020
ACTION PLAN

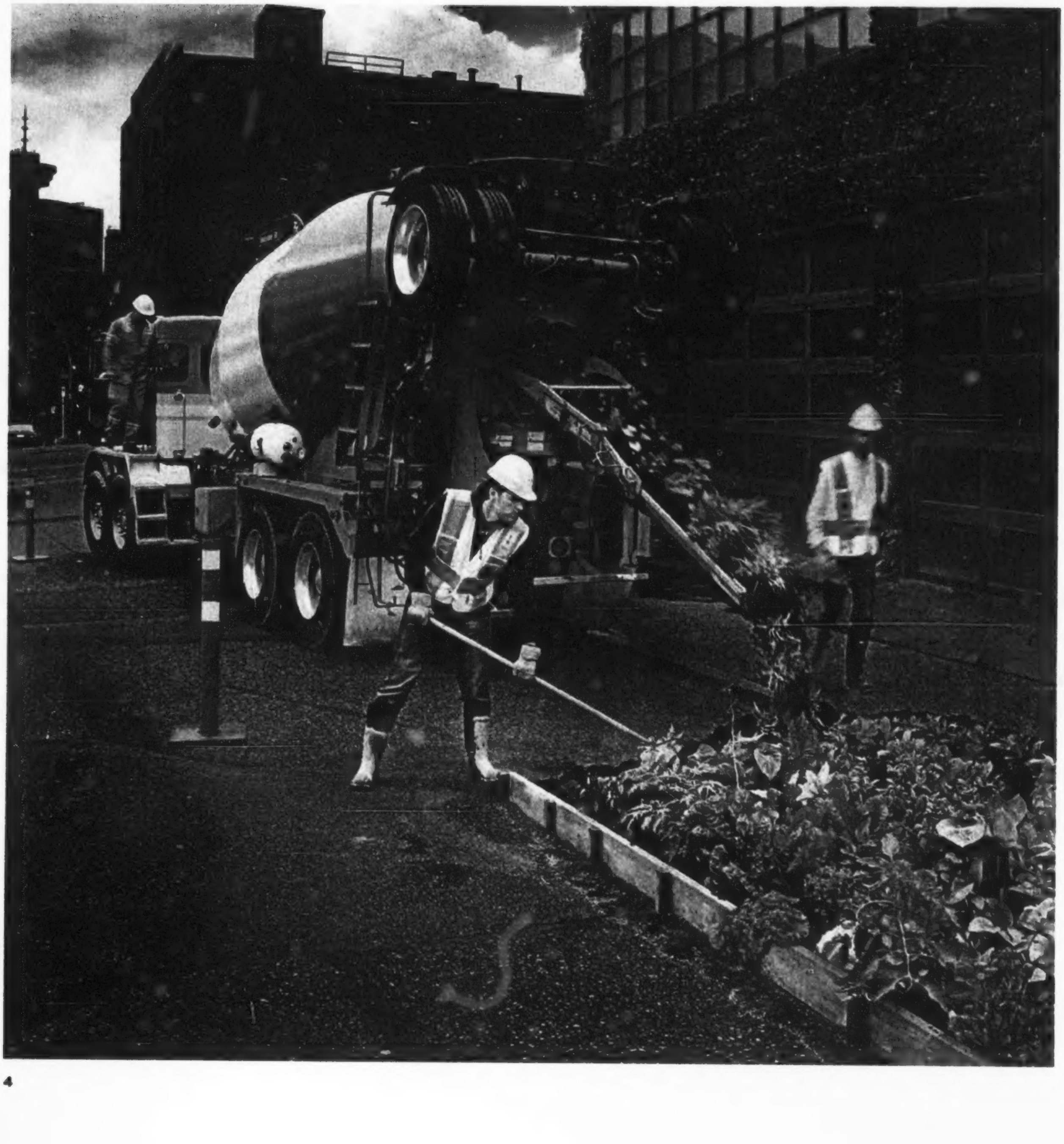
The Greenest City Story 5
Goal 1: Green Economy 10
Goal 2: Climate Leadership 16
Goal 3: Green Buildings 22
Goal 4: Green Transportation 28
Goal 5: Zero Waste 34
Goal 6: Access to Nature 40
Goal 7: Lighter Footprint 46
Goal 8: Clean Water 52
Goal 9: Clean Air 58
Goal 10: Local Food 64
A Conclusion & A Beginning 71
Acknowledgements 72





> "It's up to everyone to do their part, to rethink, re-evaluate and re-imagine the way Vancouver works and how we lead our lives."

Vancouver's Greenest City Action Team
Vancouver 2020: A Bright Green Future



THE GREENEST CITY STORY

Ambitious, necessary, and possible—this is the *Greenest City 2020 Action Plan* (GCAP) for Vancouver. It is our road map to becoming the greenest city in the world by 2020.

This plan sets the course toward realizing a healthy, prosperous, and resilient future for our city. It calls on us all to rise to the challenge of transforming our community to create a better life for future generations.

As with other cities around the world, Vancouver faces challenges that call for decisive action and innovation, and every resident and business will play a crucial role in helping us, as a community, to reach our goals. A growing population, climate uncertainty, rising fossil fuel prices, and shifting economic opportunities are just some of the challenges that now call on us to work hard to remain one of the best places in the world in which to live.

In the 1960s, Vancouver's Strathcona neighbourhood residents stopped the construction of a massive freeway into downtown that would have levelled their community and altered the shape of the city forever. Today, Vancouver is one of a very few cities in North America that does not have a major highway cutting through its core. And our city was one of the first in the world to recognize the importance and gravity of climate change. In 1990, the groundbreaking Clouds of Change Task Force recommended the city begin reducing its carbon dioxide emissions.

Today, Vancouver has the smallest per capita carbon footprint of any city in North America. We have been able to achieve this in collaboration with our energy utility providers, senior levels of government, and innovators in the business and non-profit sectors who see new opportunity in responding to this challenge. Because of these achievements, Vancouver is quickly becoming a new green economy hub.

Vancouverites have consistently made choices that have turned our home into one of the world's most livable cities. There's much to love about Vancouver, from magnificent natural surroundings to strong environmental values, from a diverse cultural mix and innovative economy to our vibrant neighbourhoods. It's now up to all of us to help make Greenest City 2020 a reality. Vancouver is well positioned to achieve this plan's 10 greenest city goals in the coming decade. Indeed, as you'll see, we're already well on our way.

HOW DOES VANCOUVER COMPARE?

There is some debate about the usefulness of ranking cities, and about the methods used to determine the sustainability or livability of a specific place. However, it's important to know how Vancouver stacks up against other municipalities around the world as we learn to build more prosperous, healthy, and green cities.

Vancouver does well on national and international rankings that relate to the Greenest City goals. Organizations such as Corporate Knights and the Economist Intelligence Unit are increasingly recognizing Vancouver's efforts to be greener, more livable, more sustainable, and more resilient.

THERE'S NO TIME LIKE THE PRESENT

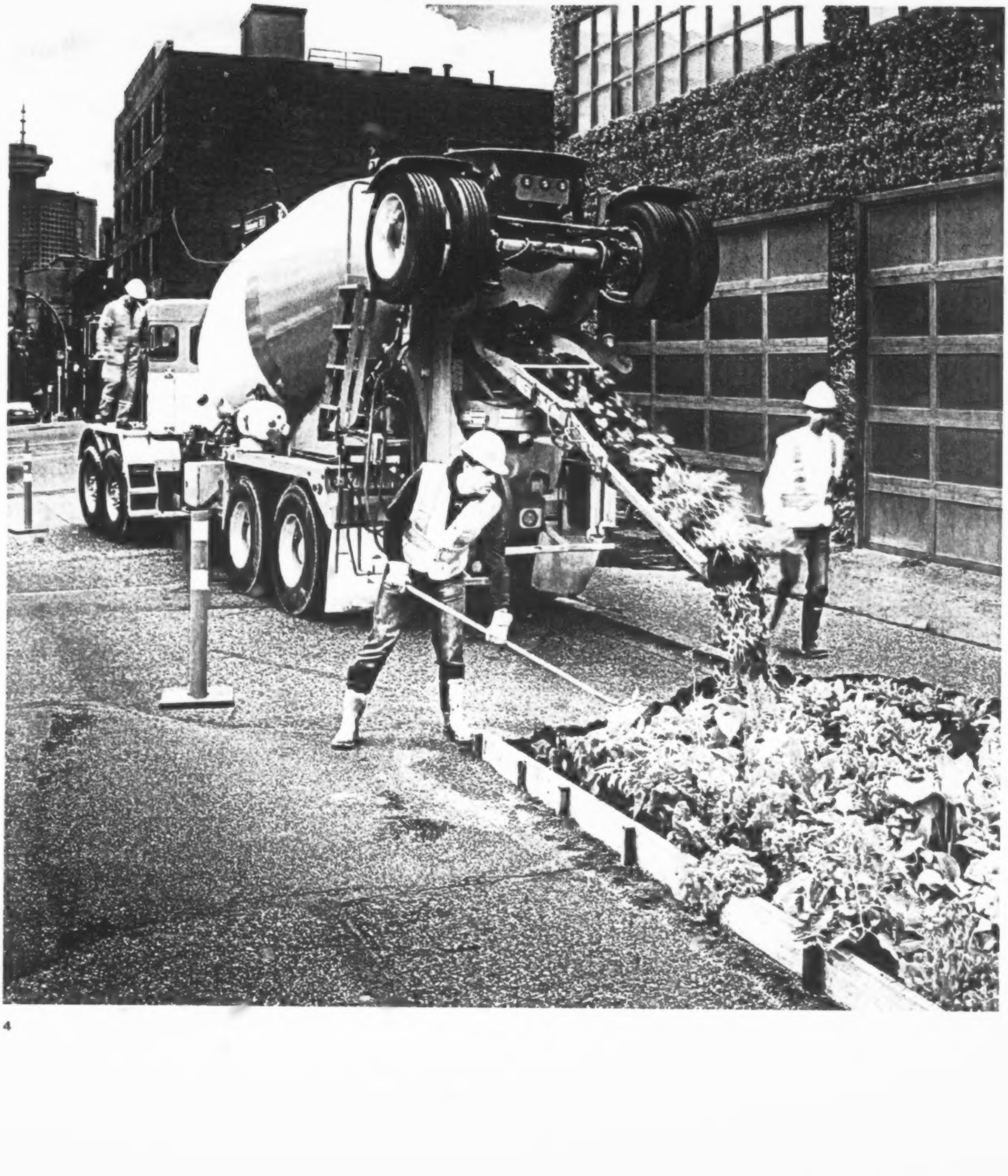
Why are we working towards becoming the Greenest City and why now?

Vancouver residents have an ecological footprint three times larger than the Earth can sustain. The decisions we make every day about how we move around the city, what we buy or eat, and how we deal with our waste means that we currently use far more than our fair share of the Earth's resources.

Fortunately, there are many solutions that address climate change and other environmental challenges while creating green jobs, strengthening our community, increasing the livability of our city and improving the well-being of our citizens.

In particular, the green economy is rapidly expanding and Vancouver is ready to take advantage of this opportunity. The former Chief Economist for the World Bank, Sir Nicholas Stern, has estimated that failure to tackle the climate crisis could cost the global economy $6.6 trillion a year. This is an important lesson. Although there are investments required to become the Greenest City, there are also real risks associated with ignoring the issue.

This action plan sets out a clear vision, with concrete targets and the steps required to achieve each one of them. Between now and 2020, there will be a lot to learn and do to achieve the Greenest City goals. But there is little doubt that the results will improve our quality of life and make us even more globally competitive, while helping us live in better balance with the Earth's natural systems.



THE GREENEST CITY STORY

Ambitious, necessary, and possible—this is the *Greenest City 2020 Action Plan* (GCAP) for Vancouver. It is our road map to becoming the greenest city in the world by 2020.

This plan sets the course toward realizing a healthy, prosperous, and resilient future for our city. It calls on us all to rise to the challenge of transforming our community to create a better life for future generations.

As with other cities around the world, Vancouver faces challenges that call for decisive action and innovation, and every resident and business will play a crucial role in helping us, as a community, to reach our goals. A growing population, climate uncertainty, rising fossil fuel prices, and shifting economic opportunities are just some of the challenges that now call on us to work hard to remain one of the best places in the world in which to live.

In the 1960s, Vancouver's Strathcona neighbourhood residents stopped the construction of a massive freeway into downtown that would have levelled their community and altered the shape of the city forever. Today, Vancouver is one of a very few cities in North America that does not have a major highway cutting through its core. And our city was one of the first in the world to recognize the importance and gravity of climate change. In 1990, the groundbreaking Clouds of Change Task Force recommended the city begin reducing its carbon dioxide emissions.

Today, Vancouver has the smallest per capita carbon footprint of any city in North America. We have been able to achieve this in collaboration with our energy utility providers, senior levels of government, and innovators in the business and non-profit sectors who see new opportunity in responding to this challenge. Because of these achievements, Vancouver is quickly becoming a new green economy hub.

Vancouverites have consistently made choices that have turned our home into one of the world's most livable cities. There's much to love about Vancouver, from magnificent natural surroundings to strong environmental values, from a diverse cultural mix and innovative economy to our vibrant neighbourhoods. It's now up to all of us to help make Greenest City 2020 a reality. Vancouver is well positioned to achieve this plan's 10 greenest city goals in the coming decade. Indeed, as you'll see, we're already well on our way.

HOW DOES VANCOUVER COMPARE?

There is some debate about the usefulness of ranking cities, and about the methods used to determine the sustainability or livability of a specific place. However, it's important to know how Vancouver stacks up against other municipalities around the world as we learn to build more prosperous, healthy, and green cities.

Vancouver does well on national and international rankings that relate to the Greenest City goals. Organizations such as Corporate Knights and the Economist Intelligence Unit are increasingly recognizing Vancouver's efforts to be greener, more livable, more sustainable, and more resilient.

THERE'S NO TIME LIKE THE PRESENT

Why are we working towards becoming the Greenest City and why now?

Vancouver residents have an ecological footprint three times larger than the Earth can sustain. The decisions we make every day about how we move around the city, what we buy or eat, and how we deal with our waste means that we currently use far more than our fair share of the Earth's resources.

Fortunately, there are many solutions that address climate change and other environmental challenges while creating green jobs, strengthening our community, increasing the livability of our city and improving the well-being of our citizens.

In particular, the green economy is rapidly expanding and Vancouver is ready to take advantage of this opportunity. The former Chief Economist for the World Bank, Sir Nicholas Stern, has estimated that failure to tackle the climate crisis could cost the global economy $6.6 trillion a year. This is an important lesson. Although there are investments required to become the Greenest City, there are also real risks associated with ignoring the issue.

This action plan sets out a clear vision, with concrete targets and the steps required to achieve each one of them. Between now and 2020, there will be a lot to learn and do to achieve the Greenest City goals. But there is little doubt that the results will improve our quality of life and make us even more globally competitive, while helping us live in better balance with the Earth's natural systems.

CREATING THE GREENEST CITY 2020 ACTION PLAN

The *Greenest City 2020 Action Plan* (GCAP) builds on the 2009 work of Mayor Gregor Robertson's Greenest City Action Team. This group of local experts researched best practices from leading green cities around the world, and established the goals and targets that would make Vancouver the world's Greenest City. This work was published in *Vancouver 2020: A Bright Green Future.*

Recognizing the importance of working toward the goals and targets right away, the team also recommended more than 75 quick-start actions that City of Vancouver staff could begin to act on immediately. The team then tasked City staff to come up with a more robust plan to outline what would be needed to achieve the goals and targets. The result is the *Greenest City 2020 Action Plan.*

During the development of the GCAP, many people gave their time and ideas. More than 35,000 people from around the world participated in the process online, through social media, and in face-to-face workshops or events. More than 9,500 people, most of whom lived in Vancouver, actively added their ideas, insights, and feedback to help determine the best path to achieve this plan. Participants often asked how they could begin to take these ideas and make them real in their own backyards, in their neighbourhoods, and in their businesses.

With over 60 City staff, more than 120 organizations, and thousands of individuals contributing to the creation of the GCAP, we've set the example for best practice in citizen collaboration and built the kinds of partnerships required for achieving the Greenest City goals and targets. These efforts will need to continue, with each of us contributing in our own way and in our own lives to becoming the Greenest City.

VANCOUVER, WE HAVE WHAT IT TAKES

The race to become the Greenest City in the world is both a friendly and fierce competition. It's friendly because when one city succeeds, we all benefit from the shared knowledge and improved health of our planet, as well as the new opportunities that emerge in the green economy. The race is a fierce one because the stakes are so high. In fact, the kind of change needed for all of us to thrive in healthy and prosperous communities requires a world full of Greenest Cities.

There are four key ingredients required for us to succeed: vision, leadership, action, and partnerships.

Vision

The *Greenest City 2020 Action Plan* is a strategy for staying on the leading edge of city sustainability. Our vision is to create opportunities today while building a strong local economy, vibrant and inclusive neighbourhoods, and an internationally recognized city that meets the needs of generations to come. This is a vision that has an important role for each of us.

Leadership

Leadership is required from City staff and elected officials, from organizations operating in diverse sectors across the city, and from Vancouver residents—many of whom have already contributed to the development of this plan. The City will need to lead the way in its own operations as well, demonstrating what a Greenest City looks like in City-run buildings, facilities, and operations. Leadership from other levels of government and other public sector agencies will also be critical to our success.

Action

A plan like this is only useful when it is acted upon. The GCAP gives clear targets to work towards, with baseline numbers to indicate our current level of performance. The highest priority actions for the next three years have been identified, as well as strategies and actions that will help to achieve our targets by 2020.

Partnerships

The City of Vancouver can't achieve the GCAP by itself, with its limited sphere of influence and resources. That means partnerships will be the key to achieving this plan. The process of developing the GCAP, as well as the implementation of the many quick-start actions, has demonstrated the power of partnerships in building our future city.

WE HAVE AN AMBITIOUS AND MEASURABLE ACTION PLAN

The Greenest City 2020 Action Plan is divided into 10 smaller plans, each with a long-term (year 2050) goal and medium-term (year 2020) targets. Together, these 10 plans address three overarching areas of focus: carbon, waste, and ecosystems.

Summaries of each plan are provided in the following pages. They include the current status of each target, the highest priority actions from each plan, and the key strategies that will take us to our goals. They also contain some useful definitions and contextual information, as well as stories about some of the Greenest City actions that are already underway in our city.

Although the GCAP is organized into 10 unique goals, the actions work together to form one integrated plan. For example, increasing composting and gardening helps achieve the Green Economy, Zero Waste, Access to Nature, and Local Food targets. Improving transit services supports the Climate Leadership, Green Transportation, and Clean Air targets.

While City Council approved the GCAP in July 2011, some elements of the plan will require further policy development or additional resources as well as Council approval before they can be implemented.

WALKING THE TALK: HOW VANCOUVER IS BECOMING THE GREENEST CITY INSIDE AND OUT

One of the things heard loud and clear during the public engagement process was that the City needs to set an example in its own operations. Four high-priority actions in City operations have been identified in response.

1. Plan and implement a comprehensive corporate waste reduction and diversion program for all City facilities.
2. Develop a procurement policy and practice that supports the purchase and use of local food in City-run facilities, including community centres and Park Board restaurants and concessions.
3. Look for opportunities to green community events that the City runs, sponsors, and permits.
4. Plan and implement a program to significantly reduce greenhouse gas emissions as well as fossil fuel use in City-run buildings and vehicles, and achieve carbon-neutral operations.

CREATING THE GREENEST CITY 2020 ACTION PLAN

The *Greenest City 2020 Action Plan* (GCAP) builds on the 2009 work of Mayor Gregor Robertson's Greenest City Action Team. This group of local experts researched best practices from leading green cities around the world, and established the goals and targets that would make Vancouver the world's Greenest City. This work was published in *Vancouver 2020: A Bright Green Future*.

Recognizing the importance of working toward the goals and targets right away, the team also recommended more than 75 quick-start actions that City of Vancouver staff could begin to act on immediately. The team then tasked City staff to come up with a more robust plan to outline what would be needed to achieve the goals and targets. The result is the *Greenest City 2020 Action Plan*.

During the development of the GCAP, many people gave their time and ideas. More than 35,000 people from around the world participated in the process online, through social media, and in face-to-face workshops or events. More than 9,500 people, most of whom lived in Vancouver, actively added their ideas, insights, and feedback to help determine the best path to achieve this plan. Participants often asked how they could begin to take these ideas and make them real in their own backyards, in their neighbourhoods, and in their businesses.

With over 60 City staff, more than 120 organizations, and thousands of individuals contributing to the creation of the GCAP, we've set the example for best practice in citizen collaboration and built the kinds of partnerships required for achieving the Greenest City goals and targets. These efforts will need to continue, with each of us contributing in our own way and in our own lives to becoming the Greenest City.

VANCOUVER, WE HAVE WHAT IT TAKES

The race to become the Greenest City in the world is both a friendly and fierce competition. It's friendly because when one city succeeds, we all benefit from the shared knowledge and improved health of our planet, as well as the new opportunities that emerge in the green economy. The race is a fierce one because the stakes are so high. In fact, the kind of change needed for all of us to thrive in healthy and prosperous communities requires a world full of Greenest Cities.

There are four key ingredients required for us to succeed: vision, leadership, action, and partnerships.

Vision

The *Greenest City 2020 Action Plan* is a strategy for staying on the leading edge of city sustainability. Our vision is to create opportunities today while building a strong local economy, vibrant and inclusive neighbourhoods, and an internationally recognized city that meets the needs of generations to come. This is a vision that has an important role for each of us.

Leadership

Leadership is required from City staff and elected officials, from organizations operating in diverse sectors across the city, and from Vancouver residents—many of whom have already contributed to the development of this plan. The City will need to lead the way in its own operations as well, demonstrating what a Greenest City looks like in City-run buildings, facilities, and operations. Leadership from other levels of government and other public sector agencies will also be critical to our success.

Action

A plan like this is only useful when it is acted upon. The GCAP gives clear targets to work towards, with baseline numbers to indicate our current level of performance. The highest priority actions for the next three years have been identified, as well as strategies and actions that will help to achieve our targets by 2020.

Partnerships

The City of Vancouver can't achieve the GCAP by itself, with its limited sphere of influence and resources. That means partnerships will be the key to achieving this plan. The process of developing the GCAP, as well as the implementation of the many quick-start actions, has demonstrated the power of partnerships in building our future city.

WE HAVE AN AMBITIOUS AND MEASURABLE ACTION PLAN

The Greenest City 2020 Action Plan is divided into 10 smaller plans, each with a long-term (year 2050) goal and medium-term (year 2020) targets. Together, these 10 plans address three overarching areas of focus: carbon, waste, and ecosystems.

Summaries of each plan are provided in the following pages. They include the current status of each target, the highest priority actions from each plan, and the key strategies that will take us to our goals. They also contain some useful definitions and contextual information, as well as stories about some of the Greenest City actions that are already underway in our city.

Although the GCAP is organized into 10 unique goals, the actions work together to form one integrated plan. For example, increasing composting and gardening helps achieve the Green Economy, Zero Waste, Access to Nature, and Local Food targets. Improving transit services supports the Climate Leadership, Green Transportation, and Clean Air targets.

While City Council approved the GCAP in July 2011, some elements of the plan will require further policy development or additional resources as well as Council approval before they can be implemented.

WALKING THE TALK: HOW VANCOUVER IS BECOMING THE GREENEST CITY INSIDE AND OUT

One of the things heard loud and clear during the public engagement process was that the City needs to set an example in its own operations. Four high-priority actions in City operations have been identified in response.

1. Plan and implement a comprehensive corporate waste reduction and diversion program for all City facilities.
2. Develop a procurement policy and practice that supports the purchase and use of local food in City-run facilities, including community centres and Park Board restaurants and concessions.
3. Look for opportunities to green community events that the City runs, sponsors, and permits.
4. Plan and implement a program to significantly reduce greenhouse gas emissions as well as fossil fuel use in City-run buildings and vehicles, and achieve carbon-neutral operations.

“You join a multitude of caring people. No one knows how many groups and organizations are working on the most salient issues of our day: climate change, poverty, deforestation, peace, water, hunger, conservation, human rights, and more. This is the largest movement the world has ever seen.”

You Are Brilliant, and the Earth is Hiring
The Commencement Address by Paul Hawken
to the University of Portland Class of 2009

IDEA BAGS
→ WRITE YOUR IDEA FOR GREEN ACTION ON YOUR BAG.
→ PEOPLE WHO LIKE YOUR IDEA AND WANT TO ASSIST PUT THEIR CARD/CONTACT IN THE BAG.
→ COLLECT YOUR IDEA AT END OF DAY!
MAKE IT HAPPEN!
Sharpie

WE ALL HAVE A ROLE TO PLAY

The City can do a lot to ensure Vancouver achieves our Greenest City goals and targets. But there are also limits to the scope of the City's influence. That's why we need strong and effective partnerships with all of the organizations in Vancouver that have a key role to play in greening the city. This includes other levels of government, non-profit organizations, businesses, and social enterprises. Most importantly, it includes every citizen—and that includes you.

1/ Secure Vancouver's international reputation as a mecca of green enterprise.

GREEN ECONOMY

TARGETS:

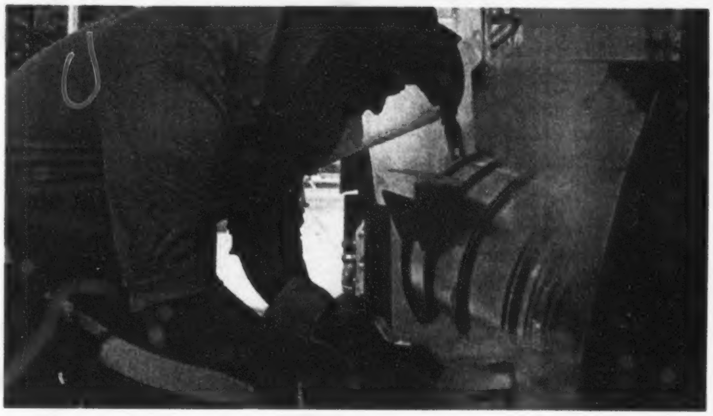
1. **DOUBLE THE NUMBER OF GREEN JOBS OVER 2010 LEVELS BY 2020.**
2. **DOUBLE THE NUMBER OF COMPANIES THAT ARE ACTIVELY ENGAGED IN GREENING THEIR OPERATIONS OVER 2011 LEVELS BY 2020.**

Vancouver's green economy is growing more than twice as fast as traditional sectors. The green economy includes jobs in clean technology and products, green building design and construction, sustainability consulting and education, recycling and composting, local food, green transportation, and much, much more.

Green jobs can be found across traditional and new industry sectors. For example, many of the resource-based companies headquartered in Vancouver have sustainability departments, which have created green jobs, as have energy and environment groups at Vancouver's more progressive financial institutions and telecommunications companies. Vancouver's emerging eco-fashion innovators are finding ways to use sustainably produced fabrics and other materials in their manufacturing processes. Many of BC's clean technology companies that are working towards energy solutions such as solar, wind and tidal power, as well as bio-energy technologies, also call Vancouver home.

Green economic development is also about greening all sectors of the economy, encouraging organizations and businesses to make environmentally responsible improvements in their operations. This may mean sourcing recycled, reclaimed or locally manufactured materials, taking steps to improve energy efficiency, or reducing the amount of solid waste that businesses produce.

There's a strong business case for going green. Efforts to increase environmentally sound practices save money, including savings from reduced waste disposal and energy costs. A green company also benefits from access to contracts with organizations that have sustainable purchasing requirements. In addition, companies that recognize the benefits of integrating their business systems internally as well as with other companies and organizations will find opportunities for improved productivity, innovative business processes, creation of shared value, and additional revenue streams.



By embracing green economic development, Vancouver businesses can be more competitive, gain market share, and prepare for carbon regulation, all by improving their environmental performance. Developing Vancouver's green economy is an opportunity and a necessity on the path to a healthy and sustainable future for our city.

BASELINE NUMBERS

Vancouver has approximately 14,900 green jobs in eight sectors, based on 2010/2011 numbers. This makes up more than 3% of total jobs in the city.

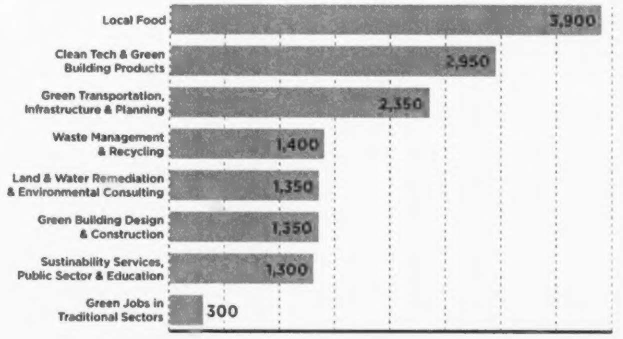
Percentage of jobs in key sectors*

KEY SECTORS	PER CENT OF JOBS
Wholesale & Retail Trade	13%
Health Care & Social Assistance	11%
Tourism (Accommodation & Food Service)	9%
Manufacturing	5%
Public Administration	5%
Construction	4%
Transportation & Warehousing	4%
Green Jobs	3 %

**SOURCE: Statistics Canada 2006 and VEC Green Economy Study 2010. Due to overlap of some industry sectors and multiple sources, the data do not sum to 100 percent.*

About half of Vancouver's green jobs will likely come from the creation of new jobs that don't currently exist. The other half will come from the transformation of existing jobs through skills upgrading, and through organizations that green their existing business processes and take advantage of new opportunities in the green economy.

Number of green jobs in Vancouver by sub-sector, 2010/2011



SOURCE: Vancouver Economic Commission survey and estimates, March 2010 and April 2011.

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Green Economy actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Develop programs to support each of the five green job clusters that the City has identified as priorities.* Programs might include research, technology hubs, business incubators, and network development.
2. *Establish a Green Enterprise Zone.* This area would make the Downtown Eastside and False Creek Flats the "greenest place to work in the world" by focusing green companies and organizations, green infrastructure, as well as innovations in building design and land use planning in one location. The lessons learned from this zone would then be applied city wide.
3. *Deliver a business engagement program.* This program can help Vancouver businesses make measurable improvements to their environmental performance and improve productivity and competitiveness.

GREEN JOBS

- green business development officer
- business energy advisor
- green funds manager
- carbon offsets aggregator
- carbon trader
- ICT networking specialist
- smart grid engineer and technician
- smart meter manufacturer
- green purchasing manager
- demonstration zone coordinator
- industry association director
- policy analyst and researcher
- sustainability educator

KEY STRATEGIES TO 2020

Doubling the number of green jobs in the City and greening existing businesses will take a coordinated effort. Some of the key strategies to get there include:

Economic development

Economic development by the City and the Vancouver Economic Commission (VEC) will focus efforts on five industry clusters that have the most potential for growth over the next decade. These clusters are: clean technology; green buildings; materials management and recycling; local food; and sustainability services and education, along with other emerging sectors.

Community economic development

The City is working with partners to help create job opportunities and reduce barriers to employment. This is being done through projects that deliver training and supportive employment programs. Examples include EMBERS Green Restoration (a home weatherization service), a building deconstruction program, and urban farming.

Capacity building, education, and training

The City and VEC are continuing to support and participate in a Campus-City Collaborative that offers green workforce development as well as research capacity to support the Greenest City targets. Some projects already underway include City Studio—a program to connect student researchers with critical sustainability questions facing the city, as well as a conference to ensure training offered by local post-secondary institutions matches the need for a growing green workforce.

Greening existing workplaces

The City and the VEC will work with partners to encourage and enable Vancouver companies to improve efficiencies with respect to energy, waste and water; develop innovative management practices such as green purchasing standards; and re-imagine and redesign products and services that give them a competitive edge. This will contribute to the long-term financial health of local businesses, while bringing us closer to our Greenest City targets.

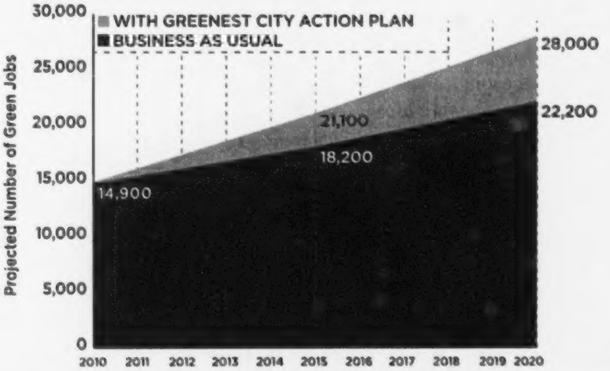
WHAT IT'S GOING TO TAKE TO GET THERE

Our ability to achieve the Green Economy targets will be largely dependent on partnerships with other organizations—particularly businesses, social enterprises, and educational institutions. The City and the VEC can support, encourage and enable green job creation, but the real leadership needs to come from those who are ready to seek out the business opportunities that exist in Vancouver's green economy.

The Green Economy goal is directly connected to the other nine goals, particularly Green Buildings, Zero Waste, and Local Food—areas where many new green jobs are expected.

At least 10% of green jobs have low barriers to employment and are accessible to residents facing language barriers, mental health issues, homelessness, or other challenges. These include jobs in local food, waste management and recycling, and some forms of construction (including home weatherization and deconstruction). Nearly 70% of green jobs require post-secondary qualifications, including technical or trades training.

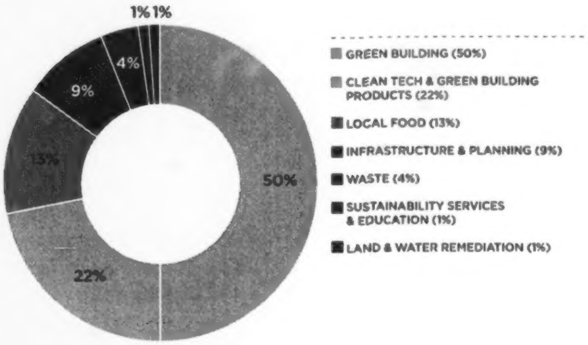
Forecasted green jobs growth



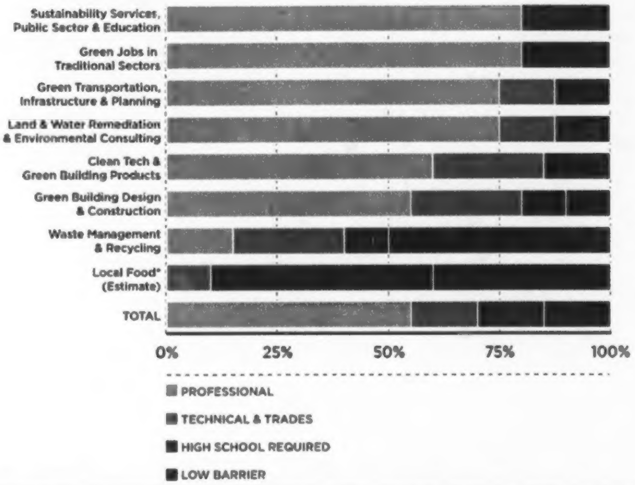
WHERE WILL THE NEW GREEN JOBS COME FROM?

This estimate of sources for Vancouver's new green jobs assumes the full implementation of the *Greenest City 2020 Action Plan* across all 10 goal areas and uses economic forecasts as its base. Though this is far from an exact science, these projections give useful information about where to focus our efforts.

Distribution of additional green jobs generated by 2020, through Greenest City Action Plan (total 10,000+)



Green jobs by training required



CITY STUDIO

Launched in the fall of 2011, City Studio is an innovative program where up to 20 students from Vancouver's six public post-secondary institutions work hand in hand with the City to investigate and generate solutions for issues related to Greenest City goals. The idea for this studio was suggested in the Talk Green to Us community consultation. Originally named "City University," it received so many votes through the website that it finished as the fourth most popular idea.

citystudiovancouver.blogspot.com

SUSTAINABILITY OF THE SOCIAL, ECONOMIC, AND ENVIRONMENTAL KIND

EMBERS Green Renovations is the first business in Vancouver to offer weatherization services to residents who want to lighten their ecological footprint and save money by making their homes less drafty and more energy efficient. It's also a social enterprise that provides training and job opportunities to residents who've experienced barriers to employment and found it difficult to enter the job market.

EMBERS, the Eastside Movement for Business and Economic Renewal Society, began its Green Renovations program in September 2010 with four employees who provided services to 50 homes in the first few months of operation.

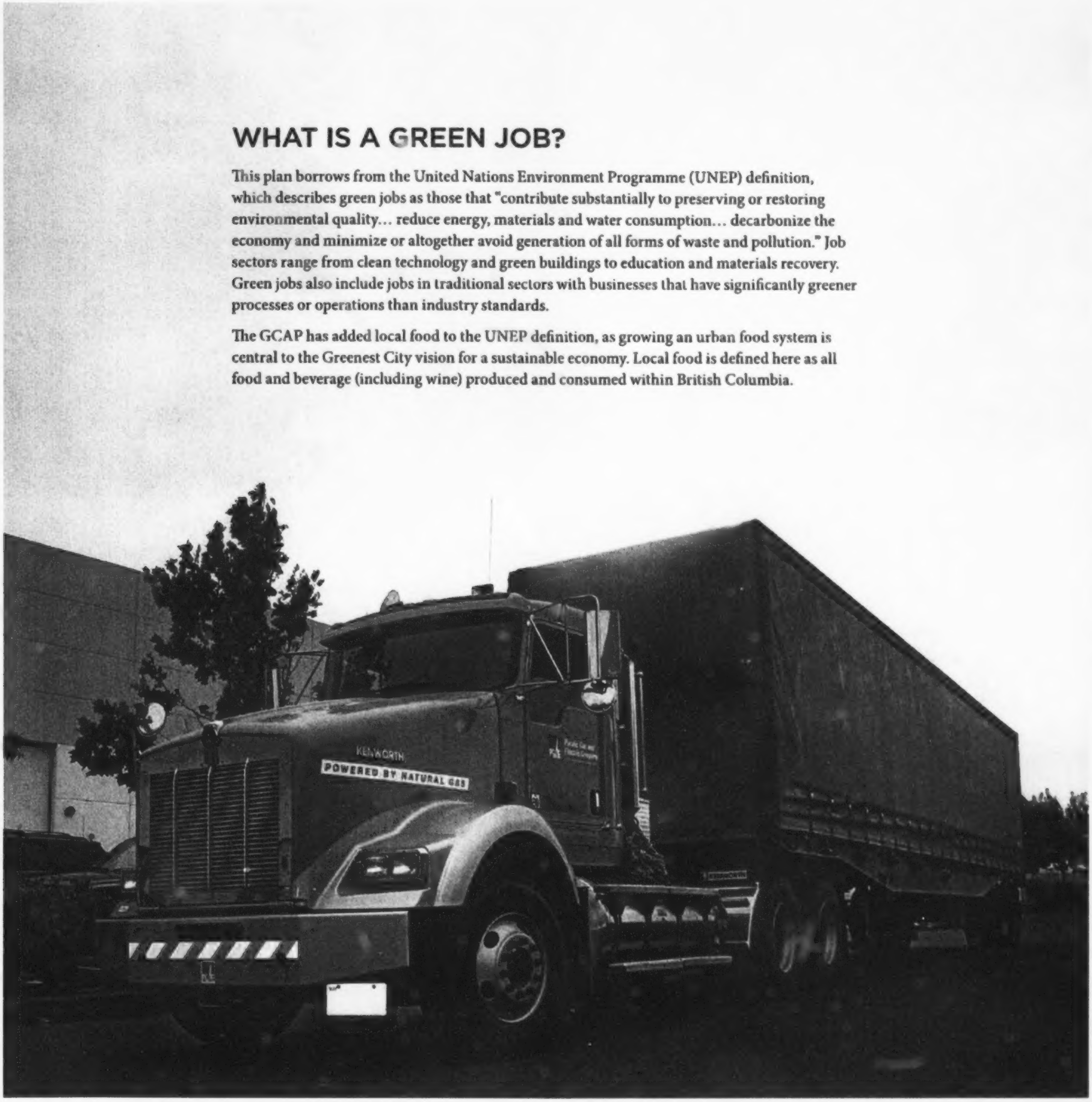
With a goal of 5,000 homes by 2020, Green Renovations supports the City's plans to create low-threshold green jobs while also supporting the GCAP's Climate Leadership and Green Buildings goals.

Home weatherization improves the energy performance of buildings by installing low-energy, double-glazed windows, sealing gaps around doors, pipes and wiring, and installing insulation in walls, floors and ceilings. It's estimated that comprehensive home weatherization improvements can reduce up to one metric tonne of carbon dioxide per year per home. That's about one seventh of the annual emissions produced by the average American car.

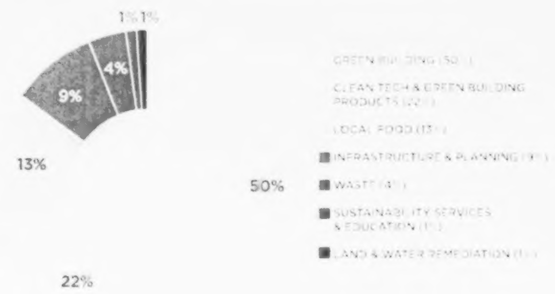
WHAT IS A GREEN JOB?

This plan borrows from the United Nations Environment Programme (UNEP) definition, which describes green jobs as those that "contribute substantially to preserving or restoring environmental quality… reduce energy, materials and water consumption… decarbonize the economy and minimize or altogether avoid generation of all forms of waste and pollution." Job sectors range from clean technology and green buildings to education and materials recovery. Green jobs also include jobs in traditional sectors with businesses that have significantly greener processes or operations than industry standards.

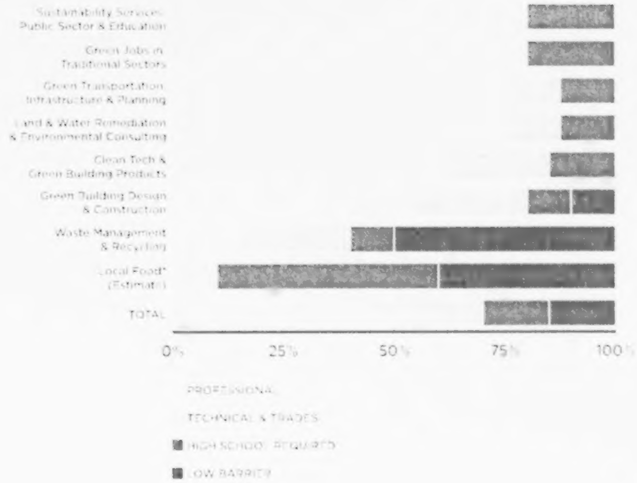
The GCAP has added local food to the UNEP definition, as growing an urban food system is central to the Greenest City vision for a sustainable economy. Local food is defined here as all food and beverage (including wine) produced and consumed within British Columbia.



Distribution of additional green jobs generated by 2020, through Greenest City Action Plan (total 10,000+)



Green jobs by training required



CITY STUDIO

Launched in the fall of 2011, City Studio is an innovative program where up to 20 students from Vancouver's six public post-secondary institutions work hand in hand with the City to investigate and generate solutions for issues related to Greenest City goals. The idea for this studio was suggested in the Talk Green to Us community consultation. Originally named "City University," it received so many votes through the website that it finished as the fourth most popular idea.
citystudiovancouver.blogspot.com

SUSTAINABILITY OF THE SOCIAL, ECONOMIC, AND ENVIRONMENTAL KIND

EMBERS Green Renovations is the first business in Vancouver to offer weatherization services to residents who want to lighten their ecological footprint and save money by making their homes less drafty and more energy efficient. It's also a social enterprise that provides training and job opportunities to residents who've experienced barriers to employment and found it difficult to enter the job market.

EMBERS, the Eastside Movement for Business and Economic Renewal Society, began its Green Renovations program in September 2010 with four employees who provided services to 50 homes in the first few months of operation. With a goal of 5,000 homes by 2020, Green Renovations supports the City's plans to create low-threshold green jobs while also supporting the GCAP's Climate Leadership and Green Buildings goals.

Home weatherization improves the energy performance of buildings by installing low-energy, double-glazed windows, sealing gaps around doors, pipes and wiring, and installing insulation in walls, floors and ceilings. It's estimated that comprehensive home weatherization improvements can reduce up to one metric tonne of carbon dioxide per year per home. That's about one seventh of the annual emissions produced by the average American car.

WHAT IS A GREEN JOB?

This plan borrows from the United Nations Environment Programme (UNEP) definition, which describes green jobs as those that "contribute substantially to preserving or restoring environmental quality… reduce energy, materials and water consumption… decarbonize the economy and minimize or altogether avoid generation of all forms of waste and pollution." Job sectors range from clean technology and green buildings to education and materials recovery. Green jobs also include jobs in traditional sectors with businesses that have significantly greener processes or operations than industry standards.

The GCAP has added local food to the UNEP definition, as growing an urban food system is central to the Greenest City vision for a sustainable economy. Local food is defined here as all food and beverage (including wine) produced and consumed within British Columbia.

2/ Eliminate dependence on fossil fuels.

CLIMATE LEADERSHIP

TARGET:

REDUCE COMMUNITY-BASED GREENHOUSE GAS EMISSIONS BY 33% FROM 2007 LEVELS.

Climate change has been called one of the greatest threats in history to human health, the economy, and the environment. The vast majority of climate scientists agree that human activities are the primary cause of this change. These activities include things like burning fuel to power vehicles and consuming energy in the heating and cooling of our homes, as well as the industrial processes that produce consumer goods, the methane released from garbage in our landfills, and much more.

Over the past century, our dependence on fossil fuels has released enough carbon dioxide and other greenhouse gases to alter the natural balance of the earth's atmosphere, thereby changing the climate. If we fail to take action on climate change, scientists predict serious consequences such as decreased food production, water shortages, and increased infestations of temperature-sensitive pests like the pine beetle that has devastated forests in BC.

Climate change is a serious challenge, but we have real solutions.

We have technology and resources to heat our homes efficiently and systems for making sure reusable, recyclable, and compostable items don't end up in the landfill. We are planning our neighbourhoods to be quieter, greener, and more walkable—where the grocery store is a few blocks from your house and you meet your neighbour more often than you sit in a traffic jam. These strategies are just the beginning.

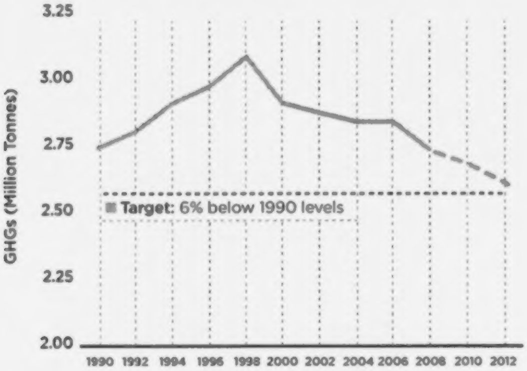
We have the knowledge, skills and innovation to bring carbon dioxide and other greenhouse gas levels back into balance with nature. We can transform our cities and enjoy cleaner air, more green space, healthier people, and create new job opportunities at the same time.

GREEN BUILDING AUDIO TOUR
Southeast False Creek & Olympic Village

BASELINE NUMBERS

Vancouver is set to bring our community-based greenhouse gas emissions down to 5% below 1990 levels, even as our population has grown by more than 27% and jobs have increased by over 18%. The original 2012 target was 6% below 1990 levels.

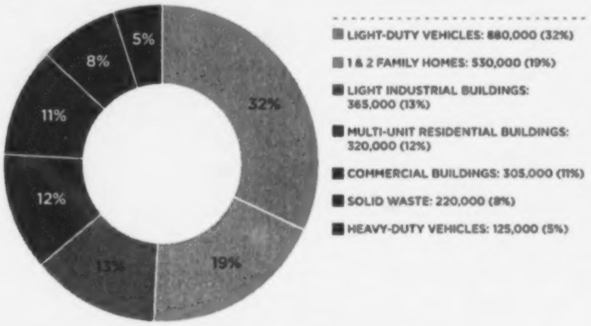
Vancouver's GHG emissions are declining



SOURCE: Vancouver's GHG Emissions 1990-2012; City of Vancouver.

Further emissions reductions are expected, thanks to improvements in the Vancouver Landfill gas collection system. Our record shows that climate leadership, prosperity, and livability can go hand in hand.

Vancouver's 2008 GHG emissions sources



SOURCE: 2008 Emissions Inventory; City of Vancouver
**An updated 2011 Emissions Inventory is expected to be available in 2012.*

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Climate Leadership actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Work with partners in the city to build new neighbourhood-scale renewable energy systems.* The award-winning Southeast False Creek Neighbourhood Energy Utility has reduced greenhouse gas emissions by 55% over conventional technologies. This is a cost-effective model for providing low-carbon, secure, and affordable heating to buildings in denser neighbourhoods and other developments in the city.
2. *Work with partners to convert large-scale steam systems to renewable energy.* Large industrial operations, as well as institutions like universities, typically burn natural gas in centralized steam systems to provide heat. By converting systems to hot water instead of steam, and using alternative renewable fuels like biomass to heat the water, these systems can be made more efficient and reduce their greenhouse gas emissions.
3. *Develop a policy framework that clearly articulates when the City will or will not consider different renewable energy sources for district energy systems.* There is a great deal of emerging research that needs to be considered when developing plans for different types of renewable energy. The City needs to make sure it is working toward environmentally sound solutions that are also healthy for residents and ecosystems, as well as financially feasible and secure for the long term.

GREEN JOBS

- sustainability manager
- district energy system engineer and technician
- geothermal energy technician
- biomass energy technician
- solar energy technician
- power engineer
- natural gas engine mechanic
- policy analyst and researcher
- educator

KEY STRATEGIES TO 2020

Help to bring new neighbourhood-scale renewable energy systems online

Neighbourhoods that have a mix of single-family homes, townhouses and apartments, and are built with moderate density, offer an excellent opportunity to service multiple buildings with a single system using a renewable energy source. Grouping buildings together under one heating system and having a neighbourhood-scale operator—whether it's a utility, a business, the City, or a co-op—helps overcome the barriers of high construction costs and the historic low energy prices of individual, non-renewable systems.

Support implementation of Green Buildings, Green Transportation, and Zero Waste plans (see sections within this document)

A sizable 55% of Vancouver's emissions come from buildings, while 37% come from transportation and 8% from emissions created at the landfill from solid waste. The GCAP contains three specific plans that outline detailed strategies and actions in these areas that support Vancouver's leadership on climate action.

Develop a climate change adaptation plan

Current climate science indicates that Vancouver is likely to see drier summers, more intense weather events involving wind, rain and snow, and the gradual rise of sea levels as the global climate changes. The City of Vancouver is participating in the Local Governments for Sustainability climate change adaptation pilot project as local governments around the world now recognize the need to prepare for these kinds of changes.

Support provincial climate and energy plans

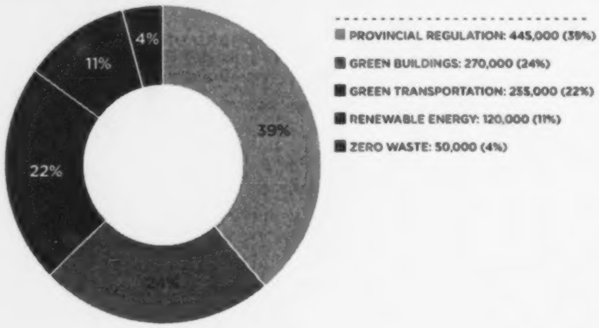
The provincial government's 2007 *Climate Action Plan* and 2010 *BC Energy Plan* include proposed actions such as regulating vehicle fuel efficiency and decreasing BC's imports of coal-fire generated electricity. Greening the provincial power supply, including new technology to improve grid management and facilitate clean energy, will be critical to achieving the Climate Leadership goal.

WHAT IT'S GOING TO TAKE TO GET THERE

Despite Vancouver's success to date, achieving the 2020 Climate Leadership target will call on all of us to expand our efforts. We need to double the current rate by which we've been reducing our greenhouse gas emissions. The success of this plan also depends on continued action from the provincial and federal governments to decrease the carbon content of vehicle fuels and electricity, and to support Canadian cities with new regulatory authority that enables each municipality to build a low-carbon future.

The foundations of the Climate Leadership goal are the Green Buildings, Green Transportation, and Zero Waste sections of this plan. Other specific linkages to actions within this plan include the creation of new green jobs, reducing our ecological footprint, and creating local food assets in the city.

WHERE WILL THE REDUCTION IN GREENHOUSE GAS EMISSIONS COME FROM?

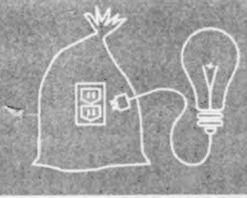


Q: WHAT IS CLIMATE CHANGE ADAPTATION?

A: ACTIONS THAT RESPOND TO THE IMPACTS OF CLIMATE CHANGE (FOR EXAMPLE, FLOODING CAUSED BY SEA LEVEL RISE OR INCREASED PRECIPITATION) THAT ALSO TAKE ADVANTAGE OF OPPORTUNITIES OR REDUCE ASSOCIATED RISKS.

Examples of adaptation actions include:

- Modifying coastal development and associated standards and regulations to respond to sea level rise
- Increasing public access to water, initiating heat alerts, and providing cooling centres to respond to extreme heat events
- Assessing the long-term performance of the sewer system for increased flow from wet weather
- Selecting hardy tree species and increasing tree maintenance including wind-firming measures
- Promoting permeable surfaces to decrease runoff and street flooding during heavy rain events
- Incorporating future climate projections into infrastructure design



CLIMATE LEADERSHIP GOES UNDERGROUND: VANCOUVER'S LANDFILL GAS COLLECTION SYSTEM

When we think of the human activities that produce greenhouse gases (GHGs), a landfill might not be the first thing that comes to mind.

In fact, landfills are a significant source of GHGs. As materials decompose in the landfill's anaerobic environment, they produce both methane and carbon dioxide, two of the primary GHGs linked to climate change.

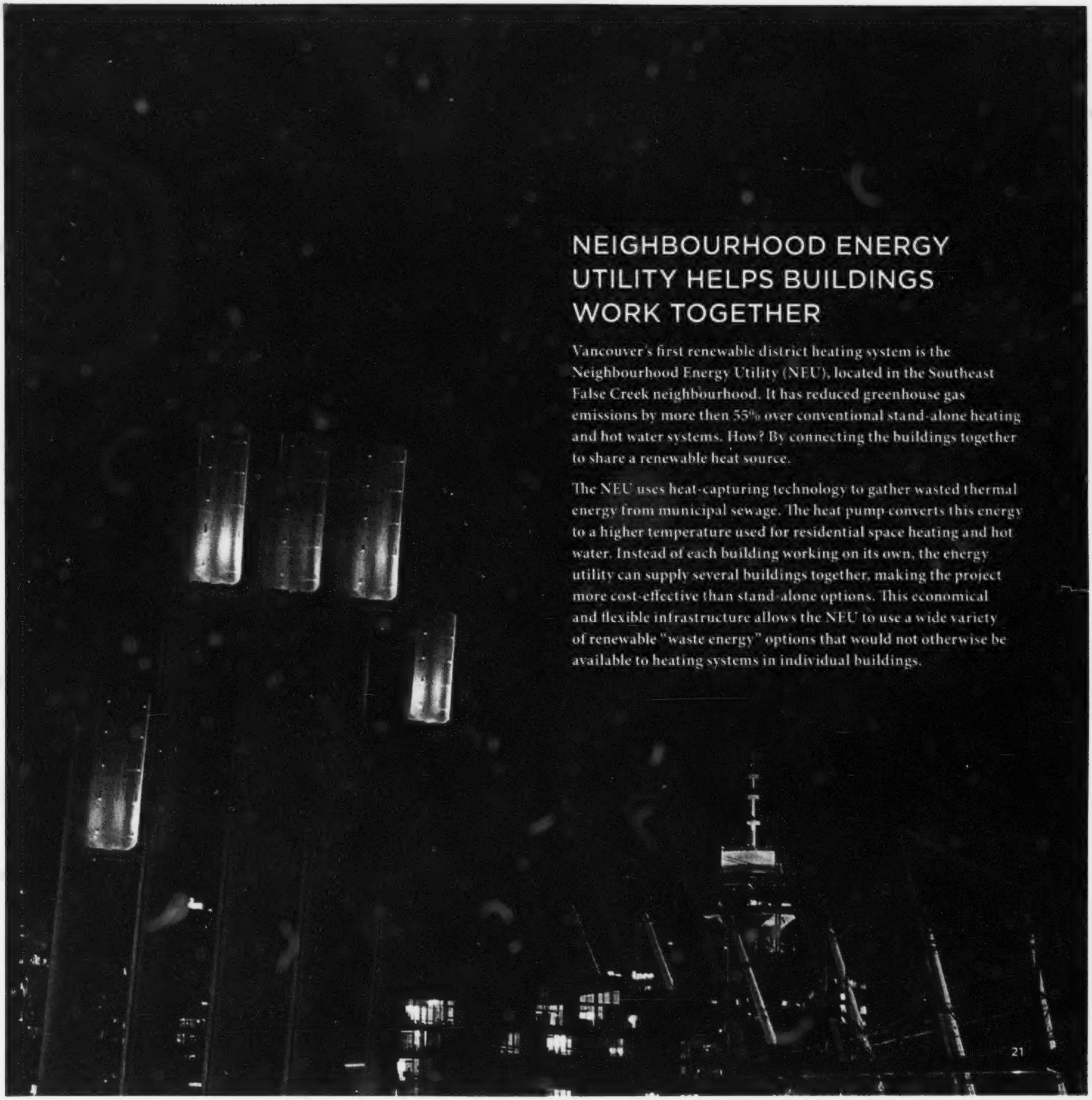
That's why Vancouver's landfill gas collection system is a key element of the city's plan to meet our GHG reduction targets and contribute to our climate leadership goal.

How does the system work? More than 200 vertical wells are placed into the landfill and connected with 10 horizontal wells. Shaped like large straws, these wells capture the methane produced by the landfill and draw it out to a co-generation facility, where it is converted to heat or electricity when needed.

Hot water is then piped to local greenhouses, which use this heat to power their operations, instead of burning natural gas.

An increased number of wells and an enhanced vacuum seal (achieved through plastic cover over certain areas) will make a significant contribution to Vancouver's GHG reduction target.

We can transform our cities and enjoy cleaner air, more green space, healthier people, and create new job opportunities at the same time.

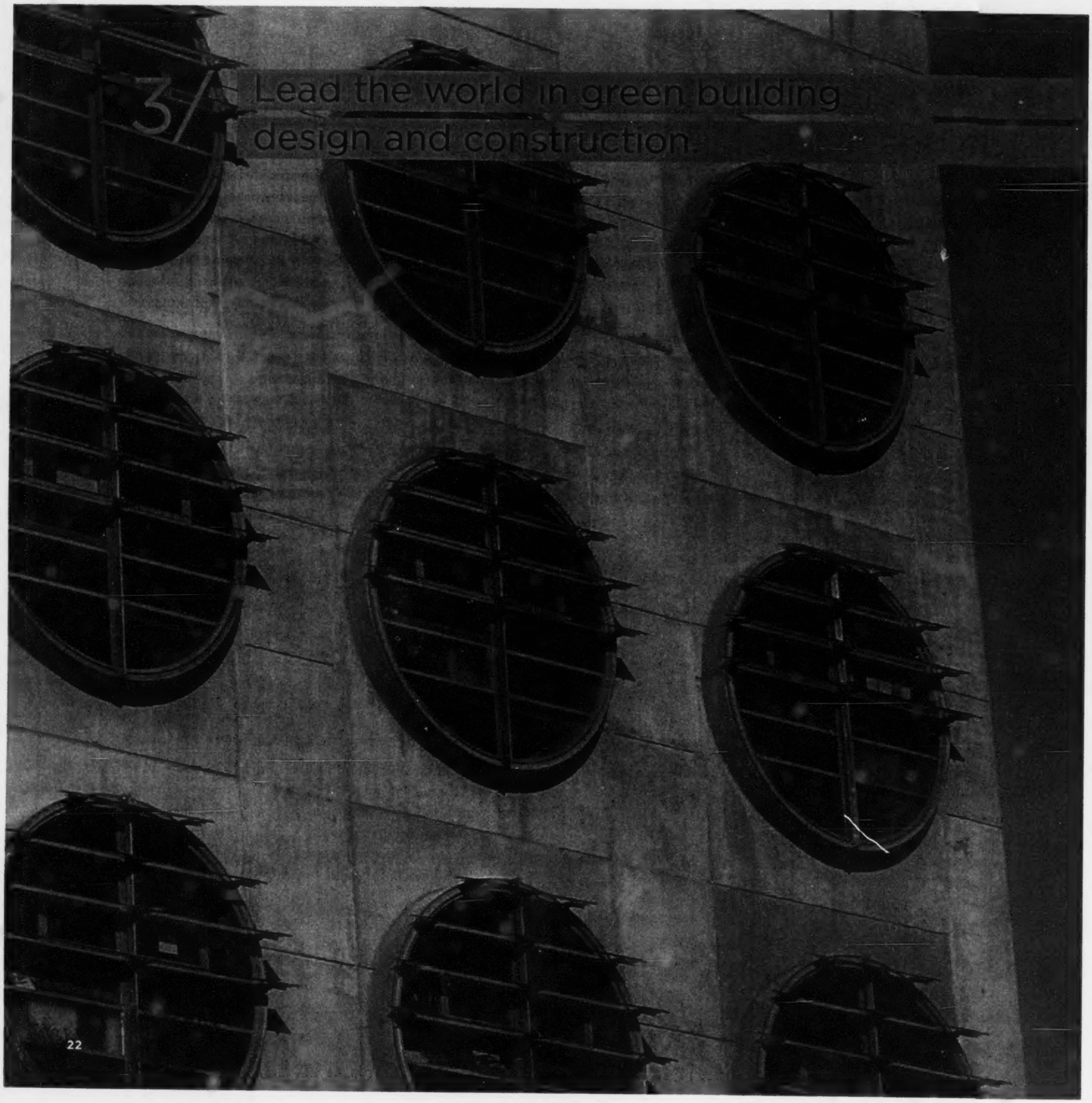


NEIGHBOURHOOD ENERGY UTILITY HELPS BUILDINGS WORK TOGETHER

Vancouver's first renewable district heating system is the Neighbourhood Energy Utility (NEU), located in the Southeast False Creek neighbourhood. It has reduced greenhouse gas emissions by more then 55% over conventional stand-alone heating and hot water systems. How? By connecting the buildings together to share a renewable heat source.

The NEU uses heat-capturing technology to gather wasted thermal energy from municipal sewage. The heat pump converts this energy to a higher temperature used for residential space heating and hot water. Instead of each building working on its own, the energy utility can supply several buildings together, making the project more cost-effective than stand-alone options. This economical and flexible infrastructure allows the NEU to use a wide variety of renewable "waste energy" options that would not otherwise be available to heating systems in individual buildings.

3/ Lead the world in green building design and construction.



GREEN BUILDINGS

TARGETS:

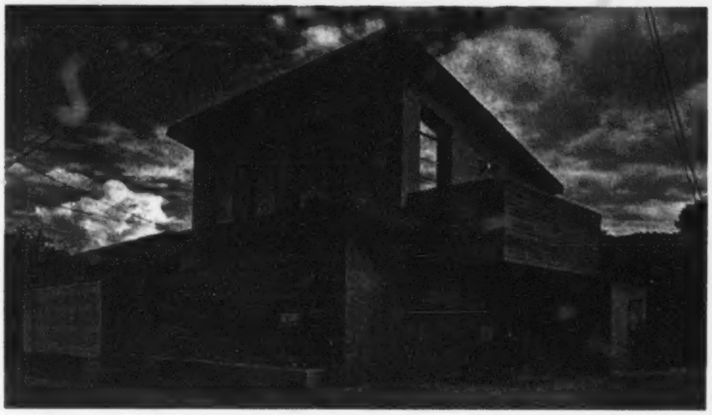
1. **REQUIRE ALL BUILDINGS CONSTRUCTED FROM 2020 ONWARD TO BE CARBON NEUTRAL IN OPERATIONS.**
2. **REDUCE ENERGY USE AND GREENHOUSE GAS EMISSIONS IN EXISTING BUILDINGS BY 20% OVER 2007 LEVELS.**

Canadians spend close to 90% of our time indoors, which makes the buildings we live and work in a big part of our lives. Buildings are also a big part of Vancouver's carbon footprint—the amount of carbon we are responsible for releasing into the atmosphere. The electricity and natural gas that buildings use make up 55% of Vancouver's greenhouse gas emissions.

Fortunately, Vancouver is already leading the way on green building design as the industry continues to grow and innovate. The City's regulations for new buildings are some of the greenest of any jurisdiction in North America.

Vancouver's next challenge is to improve the environmental performance of existing building stock by focusing on retrofits such as insulation, heating and lighting system upgrades and energy-efficient appliances, as well as on how people operate buildings.

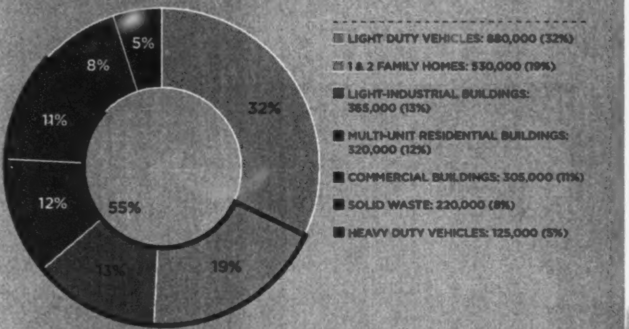
In British Columbia, we continue to have access to relatively inexpensive energy sources. In addition, the landlords and developers who make decisions about new designs or retrofits don't often pay the utility bills and don't immediately benefit from efficiency savings that can take time to show return on initial investments. These factors reduce the incentive for energy conservation. There is also a growing need for more education, training, and capacity building in the design, construction and operations of energy-efficient green buildings.



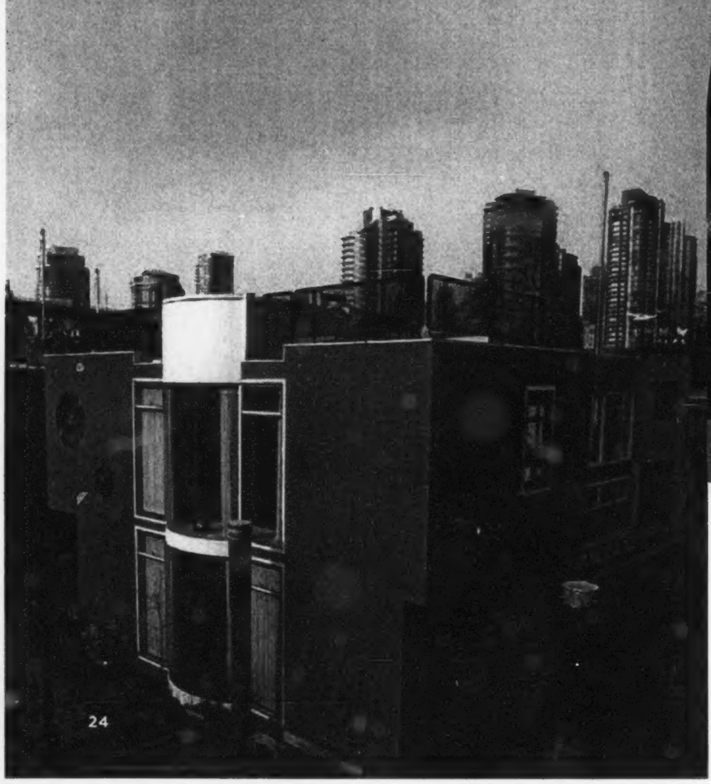
BASELINE NUMBERS

Buildings account for 55% of Vancouver's GHG emissions.

Vancouver's 2008 GHG emissions (tCO_2e)



SOURCE: 2008 Emissions Inventory; City of Vancouver
**An updated 2011 Emissions Inventory is expected to be available in 2012.*



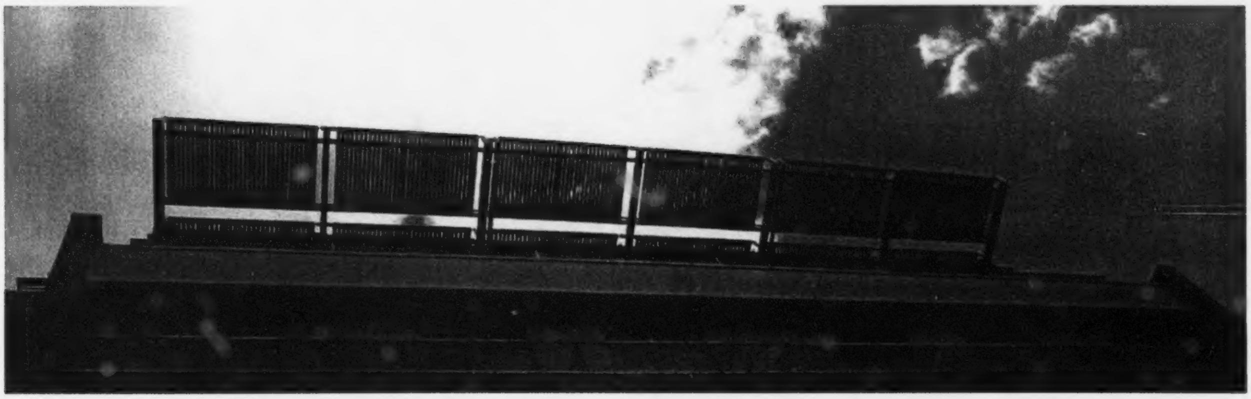
HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Green Buildings actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Update the Vancouver Building Bylaw to improve energy efficiency and reduce greenhouse gas emissions in both new and existing buildings.*
2. *Develop and promote financing tools that enable energy efficiency by bridging some of the gaps between when expenses are incurred and when cost savings are achieved.*
3. *Use price signals in permit fees for new construction as well as renovations to existing buildings to reward energy efficiency and greenhouse gas reductions.*

GREEN JOBS

- building commissioning agent
- building operator
- energy modeller
- energy manager
- green roof technician
- green renovator and contractor
- insulation specialist
- energy-efficient lighting specialist
- drafter and architect
- weatherization specialist
- policy analyst and researcher
- educator



KEY STRATEGIES TO 2020

Regulation

Research shows that successful greenhouse gas reduction plans in other cities have all included regulation as a tool to achieve their goals. The City will aim to develop policy that is simple and raises requirements consistently and predictably in order to reduce uncertainty for developers and others in the market.

Financing tools and incentives to green existing buildings

Financing tools and incentives provide ways to address concerns of affordability and fairness, and increase the pace of change towards green developments and retrofits. One example of this strategy is the development of the Home Energy Loan Program, which provides homeowners with affordable financing for energy efficiency upgrades. The money saved on energy bills can significantly offset the loan payments.

Capacity building

The City is in a unique position to bring together different groups and build partnerships that ensure there are enough skilled workers to meet the needs of a rapidly growing green building sector. This will make a significant contribution to new green jobs in Vancouver. Actions range from continued leadership in building City-run facilities that achieve net zero or living building standards, to the distribution of Green Home Renovation Guides and Passive Design Toolkits.

Education and outreach programs to engage building occupants

Technology and building science can take us part of the way to our target, but the people who live and work inside buildings are just as important—their choices make a big difference in the amount of electricity and water consumed, the waste produced, and the effective operation of green building technologies such as natural ventilation systems.

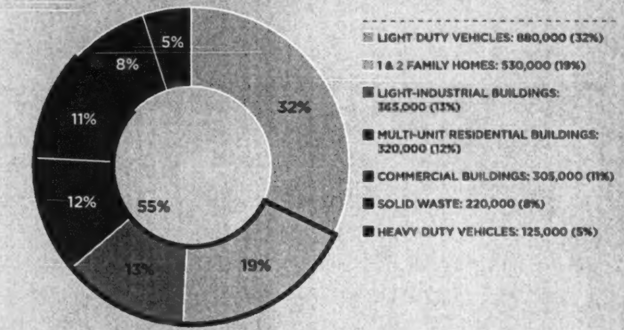
WHAT IT'S GOING TO TAKE TO GET THERE

The strategies listed here need to be implemented together. It is the synergies between regulation, financing tools and incentives, as well as capacity building and education, that will achieve the Green Building goal. Support is also needed from partners in the design, development, and construction industries, as well as from organizations providing education and capacity building services.

BASELINE NUMBERS

Buildings account for 55% of Vancouver's GHG emissions.

Vancouver's 2008 GHG emissions (tCO_2e)

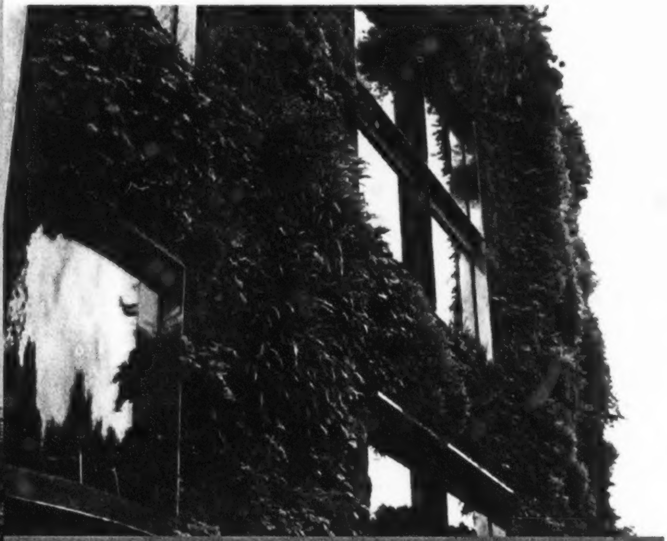


SOURCE: 2008 Emissions Inventory; City of Vancouver
**An updated 2011 Emissions Inventory is expected to be available in 2012.*

HIGHEST PRIORITY ACTIONS

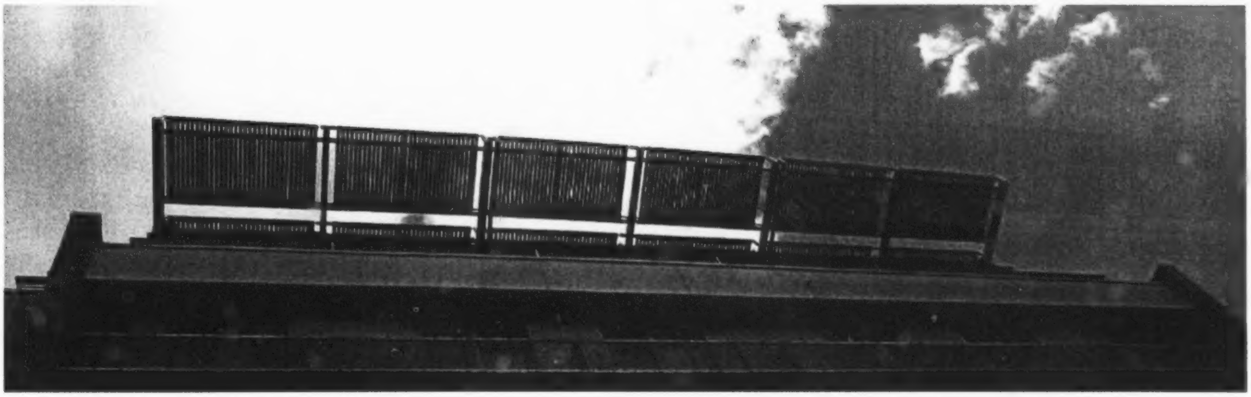
The following are the highest priority actions for 2011–2014. The complete list of Green Buildings actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Update the Vancouver Building Bylaw to improve energy efficiency and reduce greenhouse gas emissions in both new and existing buildings.*
2. *Develop and promote financing tools that enable energy efficiency by bridging some of the gaps between when expenses are incurred and when cost savings are achieved.*
3. *Use price signals in permit fees for new construction as well as renovations to existing buildings to reward energy efficiency and greenhouse gas reductions.*



GREEN JOBS

- building commissioning agent
- building operator
- energy modeller
- energy manager
- green roof technician
- green renovator and contractor
- insulation specialist
- energy-efficient lighting specialist
- drafter and architect
- weatherization specialist
- policy analyst and researcher
- educator



KEY STRATEGIES TO 2020

Regulation

Research shows that successful greenhouse gas reduction plans in other cities have all included regulation as a tool to achieve their goals. The City will aim to develop policy that is simple and raises requirements consistently and predictably in order to reduce uncertainty for developers and others in the market.

Financing tools and incentives to green existing buildings

Financing tools and incentives provide ways to address concerns of affordability and fairness, and increase the pace of change towards green developments and retrofits. One example of this strategy is the development of the Home Energy Loan Program, which provides homeowners with affordable financing for energy efficiency upgrades. The money saved on energy bills can significantly offset the loan payments.

Capacity building

The City is in a unique position to bring together different groups and build partnerships that ensure there are enough skilled workers to meet the needs of a rapidly growing green building sector. This will make a significant contribution to new green jobs in Vancouver. Actions range from continued leadership in building City-run facilities that achieve net zero or living building standards, to the distribution of Green Home Renovation Guides and Passive Design Toolkits.

Education and outreach programs to engage building occupants

Technology and building science can take us part of the way to our target, but the people who live and work inside buildings are just as important—their choices make a big difference in the amount of electricity and water consumed, the waste produced, and the effective operation of green building technologies such as natural ventilation systems.

WHAT IT'S GOING TO TAKE TO GET THERE

The strategies listed here need to be implemented together. It is the synergies between regulation, financing tools and incentives, as well as capacity building and education, that will achieve the Green Building goal. Support is also needed from partners in the design, development, and construction industries, as well as from organizations providing education and capacity building services.

CANADA'S FIRST NET ZERO RESIDENTIAL BUILDING CALLS VANCOUVER HOME

In 2010, a new and affordable housing development for seniors in Southeast False Creek became the first multi-unit residential building in Canada to generate as much energy as it uses (net zero). Because this is a first, there are some lessons to be learned and adjustments to be made along the way.

How did they do it? The designers cut energy consumption to a fraction of what a conventional building would use. They did this through techniques such as solar access and shading, natural cross-ventilation, triple-glazed windows, renewable energy sources, and visual feedback tools in each unit that encourage residents to reduce their energy use.

An open-corridor design gives every suite two outside walls, which means daylight and open windows can replace the need for artificial lighting and air conditioning. Grass and plants on the roof provide a green, attractive space for residents while also reducing the need for air conditioning. The building is powered by a district energy heat-recovery system and rooftop solar technology that provides hot water to the building.

In February 2010, this net zero building helped the Southeast False Creek development achieve the highest possible designation from the US Green Building Council —a LEED-ND (Leadership in Energy and Environmental Design, Neighbourhood Development) Platinum certification.

All new building rezonings in Vancouver are required to meet the building industry's LEED Gold standard for environmental performance.

GOLD STANDARD FOR NEW BUILDINGS

As of July 2010, all new building rezonings in Vancouver are required to meet the building industry's LEED (Leadership in Energy and Environmental Design) Gold standard for environmental performance. The LEED rating system is an internationally recognized tool for assessing green buildings. The levels of certification offered by LEED are Certified, Silver, Gold, and Platinum.

CANADA'S FIRST NET ZERO RESIDENTIAL BUILDING CALLS VANCOUVER HOME

In 2010, a new and affordable housing development for seniors in Southeast False Creek became the first multi-unit residential building in Canada to generate as much energy as it uses (net zero). Because this is a first, there are some lessons to be learned and adjustments to be made along the way.

How did they do it? The designers cut energy consumption to a fraction of what a conventional building would use. They did this through techniques such as solar access and shading, natural cross-ventilation, triple-glazed windows, renewable energy sources, and visual feedback tools in each unit that encourage residents to reduce their energy use.

An open-corridor design gives every suite two outside walls, which means daylight and open windows can replace the need for artificial lighting and air conditioning. Grass and plants on the roof provide a green, attractive space for residents while also reducing the need for air conditioning. The building is powered by a district energy heat-recovery system and rooftop solar technology that provides hot water to the building.

In February 2010, this net zero building helped the Southeast False Creek development achieve the highest possible designation from the US Green Building Council —a LEED-ND (Leadership in Energy and Environmental Design, Neighbourhood Development) Platinum certification.

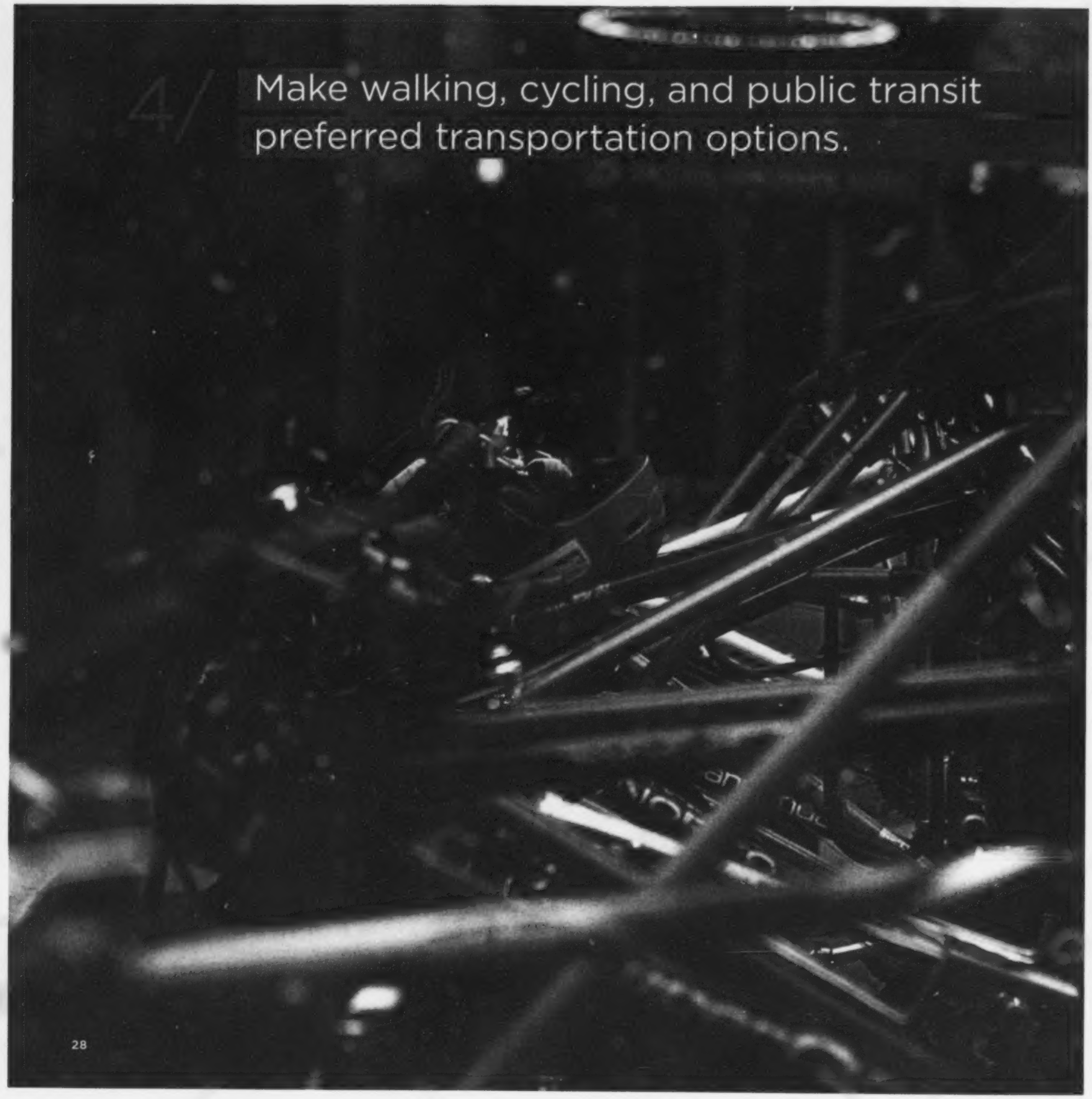
All new building rezonings in Vancouver are required to meet the building industry's LEED Gold standard for environmental performance.

GOLD STANDARD FOR NEW BUILDINGS

As of July 2010, all new building rezonings in Vancouver are required to meet the building industry's LEED (Leadership in Energy and Environmental Design) Gold standard for environmental performance. The LEED rating system is an internationally recognized tool for assessing green buildings. The levels of certification offered by LEED are Certified, Silver, Gold, and Platinum.

4/

Make walking, cycling, and public transit preferred transportation options.



GREEN TRANSPORTATION

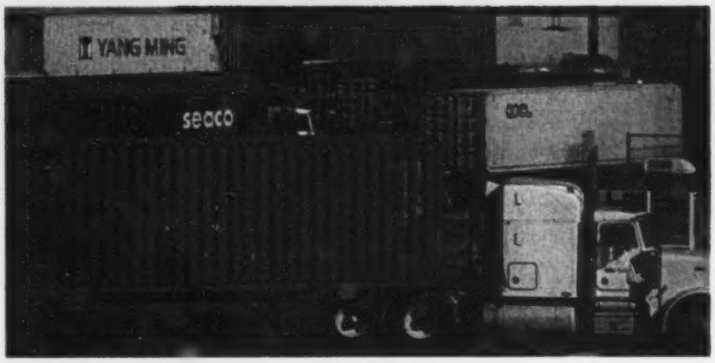
VANCOUVER
PLUG-IN
Electric

TARGETS:

1. **MAKE THE MAJORITY (OVER 50%) OF TRIPS BY FOOT, BICYCLE, AND PUBLIC TRANSIT.**
2. **REDUCE AVERAGE DISTANCE DRIVEN PER RESIDENT BY 20% FROM 2007 LEVELS.**

How we move around a city makes a big difference to our quality of life. The air we breathe, the amount of land we need, our physical health and well-being, and the cost of travel are all impacted by our transportation choices. Green transportation includes transit, as well as active transportation like cycling and walking. It is also about the places we see and experiences we have on the way to our destinations.

To achieve the Green Transportation goal, we need to make Vancouver a city where moving on foot or by bike is safe, convenient, and enjoyable. Transit should be fast, frequent, reliable, accessible, and comfortable, getting you where you need to go when you need to get there. Streets, public spaces, and neighbourhoods should be vibrant places that are alive with people, plants, and activities.



BASELINE NUMBERS

In 2008, around 40% of trips to and within the city were by foot, bike, or transit, up from 33% in 1994. With the high number of residents using the Canada Line that opened in 2009, it's likely that these numbers have continued to grow.

Currently there is no 2007 baseline data for the second Green Transportation target of reducing the distance driven per resident. City staff are working with partner agencies to identify how data collection for distances driven can be improved.

GREEN JOBS

- public bicycle operator and technician
- car-share manager and scheduler
- transit operator
- transportation engineer
- road and public realm maintenance crew
- policy analyst and researcher
- educator

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Green Transportation actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. ***Complete a new Active Transportation Master Plan and update the Transportation Plan with direction from the strategies and actions in the Greenest City Action Plan.*** Vancouver's last Transportation Plan was completed in 1997, with most actions either completed or in progress. These new plans will provide the strategies and framework for the next decade of action.
2. ***Improve pedestrian safety by developing and implementing a pedestrian safety study and action plan.***
3. ***Support transportation and active transportation planning with land use policies that enable the City to meet mobility and transportation targets.***
4. ***Work with TransLink and the Province to advocate for high-capacity, fast, frequent and reliable rapid transit for the Broadway Corridor from Commercial Drive to the University of British Columbia.***
5. ***Pursue the development and installation of a bike-share program in Vancouver's downtown and other high-potential cycling areas.*** Multiple bike-share stations would provide easy access to affordable rental bikes for short trips around the city.

KEY STRATEGIES TO 2020

Make active transportation choices such as walking and cycling feel safe, convenient, comfortable and fun for all ages and abilities

Many of us may want to choose our walking shoes or bicycle instead of the car, but barriers such as feelings of safety, comfort or convenience can get in the way. This strategy aims to address these concerns. Some key actions include: safer and more convenient bike routes, better bike parking and end-of-trip facilities, more dedicated pedestrian-priority spaces, streets and sidewalks that encourage active transportation, and improved safety through design, education and enforcement.

Plan for complete communities to encourage increased walking and cycling and to support improved transit service

A complete community is one that provides the services we use such as grocery stores, coffee shops, and post offices all within a convenient distance from where we live.

Some key actions include: planning for mixed-use areas with pedestrian-oriented public spaces so that goods and services are within a safe and enjoyable 10-minute walk from where people live; planning for new development that supports existing and new transit infrastructure; and encouraging new housing choices in existing walkable neighbourhoods to reduce household and transportation costs.

Support transit improvements to increase capacity and ensure that service is fast, frequent, reliable, fully accessible, and comfortable

It's important for people to know that their bus or SkyTrain will be there when and where they need it. In community consultations, residents have said that these kinds of improvements would increase the amount they use transit services.

Some key actions include: working with the Province and TransLink to enable new financing tools to help pay for expanded transit service; improving the transit experience through better design of waiting areas; protecting future transit corridors; and expanding measures to improve the reliability of transit services.

Advance policies that encourage residents to reduce car ownership and use

In addition to transit services and more complete communities, the City can use other tools to create opportunities for reduced car use among residents.

Some key actions include: expanding support for car sharing; better management of on-street parking; unbundling the cost of parking from housing; and working with partners to encourage work-from-home and other programs that reduce the need for vehicle trips.

Accelerate the shift to low- and zero-carbon-emission vehicles

Since cars are going to be a part of our city for some time to come, it is important to support technologies and infrastructure that reduce the environmental impact of these vehicles.

Some key actions include: supporting electric vehicles with convenient charging stations and other infrastructure, and integrating electric vehicle use into City operations.

Work with local and regional partners on a sustainable goods-movement strategy that supports a growing economy while reducing GHG emissions

Vancouver's Green Transportation targets are dependent on partnerships with others in the region. They include not just how individuals move around the city, but also how products and goods are transported.

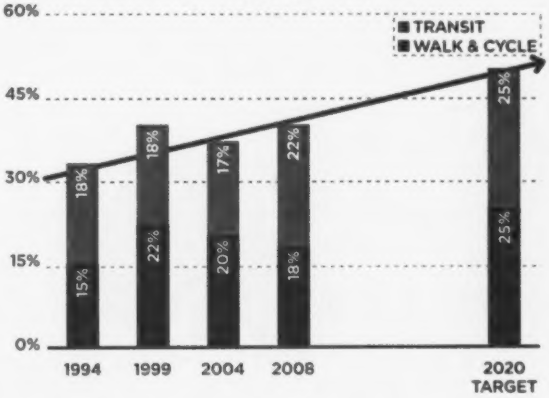
Actions include: protecting key goods-movement corridors (especially rail); encouraging low-impact goods movement such as low-carbon trucks and bicycle transportation; and encouraging the right-sizing of delivery and service vehicles.

WHAT IT'S GOING TO TAKE TO GET THERE

The City can do a great deal when it comes to greening transportation, but there is significant need for support from other agencies like TransLink, the Province, Metro Vancouver, and ICBC in order to achieve these targets.

Vancouver needs to achieve the Green Transportation targets in order to meet the 2020 targets for Climate Leadership, Lighter Footprint, and Air Quality. Green Transportation is also tied to Access to Nature and specific actions such as building new greenways and upgrading portions of our bikeways to greenways.

City-wide, 24-hour mode share (%) of all trips to and within city by walking, cycling and transit



HOW MANY WAYS CAN WE USE A CITY STREET?

In 2009, Vancouver started to answer this question with the Summer Spaces program, initiated in four different neighbourhoods. Summer Spaces closed streets to cars and opened up the asphalt to a whole range of activities including badminton, salsa dancing, street hockey, art lessons, choirs, food carts, lounging on couches, and much more.

In 2010, the Open Streets program expanded to include five blocks of Granville Street and is expected to continue, creating more opportunities for community members to share the road. The program is now known as Viva Vancouver. Find out about upcoming activities at **vancouver.ca/viva**

CANADA LINE AND THE OLYMPICS LEGACY

The 2010 Olympic and Paralympic Winter Games built our confidence and capacity to deal with large increases in public transit use. It showed that we can increase the number of residents who use public transportation, walking, or cycling to get around our city.

Six out of 10 Metro Vancouver residents who currently drive have said they would shift to public transportation if they had the level of service provided during the Olympics. We know that this future is possible and that people are ready for it.

The Canada Line was a key piece of this transportation puzzle, boasting a current ridership that wasn't projected to be reached until 2013. The Canada Line has also encouraged new approaches to coordinated transportation and land use planning, which work together to create neighbourhoods that encourage us to choose active or public transportation options.

We know that a green transportation future is possible and that people are ready for it.

ENCOURAGING SUSTAINABLE TRANSPORTATION MAKES SENSE FOR MANY REASONS:

Health – Sustainable transportation choices mean healthier and more active citizens, cleaner air, and reduced accident risk, all of which result in higher quality of life and reduced public healthcare costs.

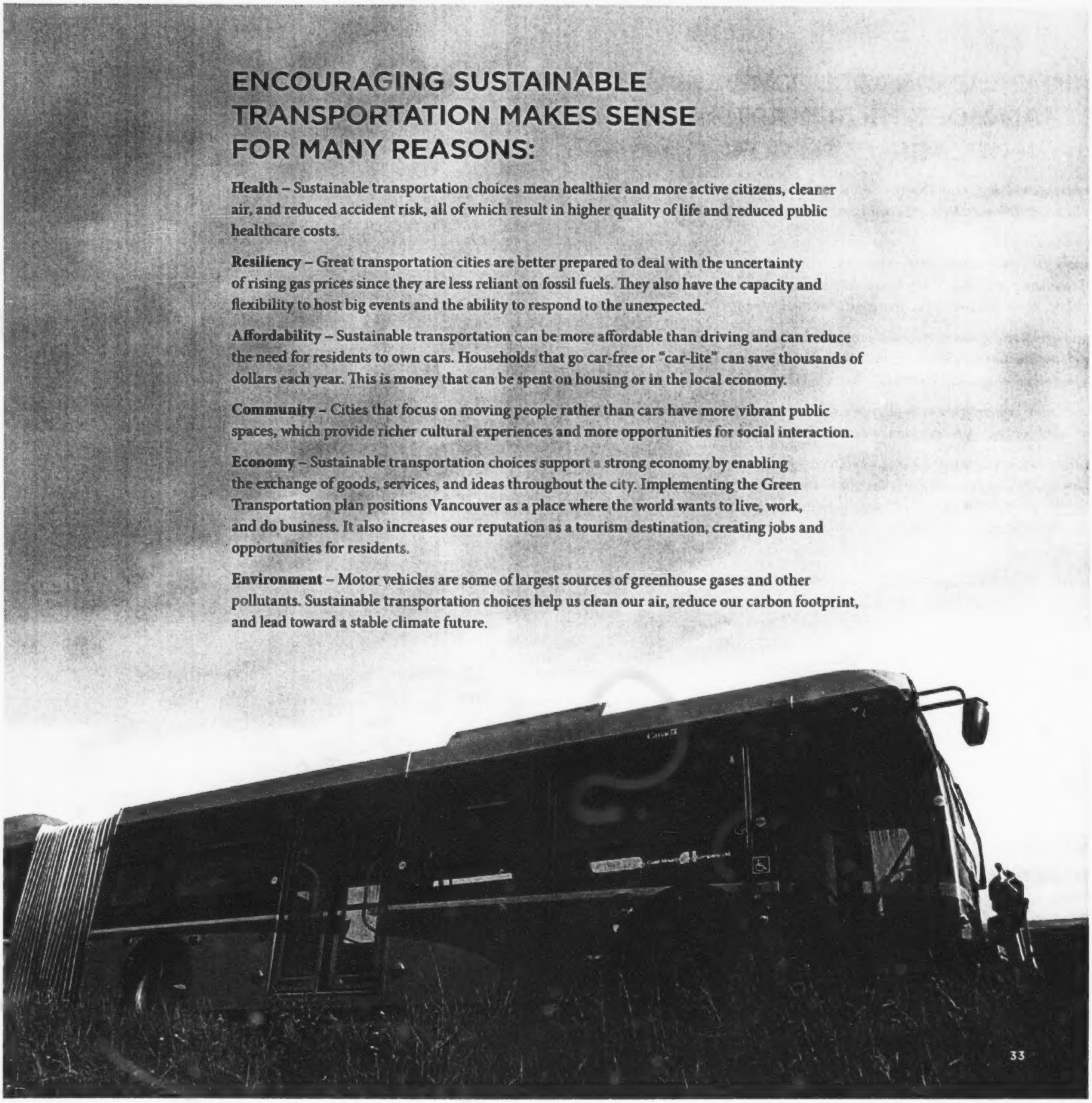
Resiliency – Great transportation cities are better prepared to deal with the uncertainty of rising gas prices since they are less reliant on fossil fuels. They also have the capacity and flexibility to host big events and the ability to respond to the unexpected.

Affordability – Sustainable transportation can be more affordable than driving and can reduce the need for residents to own cars. Households that go car-free or "car-lite" can save thousands of dollars each year. This is money that can be spent on housing or in the local economy.

Community – Cities that focus on moving people rather than cars have more vibrant public spaces, which provide richer cultural experiences and more opportunities for social interaction.

Economy – Sustainable transportation choices support a strong economy by enabling the exchange of goods, services, and ideas throughout the city. Implementing the Green Transportation plan positions Vancouver as a place where the world wants to live, work, and do business. It also increases our reputation as a tourism destination, creating jobs and opportunities for residents.

Environment – Motor vehicles are some of largest sources of greenhouse gases and other pollutants. Sustainable transportation choices help us clean our air, reduce our carbon footprint, and lead toward a stable climate future.



HALF OF GARBAGE IS COMPOST

5/ Create zero waste.

ZERO WASTE

TARGET:

REDUCE SOLID WASTE GOING TO THE LANDFILL OR INCINERATOR BY 50% FROM 2008 LEVELS.

Garbage has become so common that it can be hard to imagine life without it. From plastic packaging on food and out-dated televisions to bins of debris outside construction sites, waste can seem like an inevitable result of how we live our lives. But it doesn't have to be.

A zero waste future is not only possible, it's also critical to solving today's climate crisis and other environmental challenges. Methane, for example, is a powerful climate-altering greenhouse gas released when things like food scraps and grass clippings are buried in landfills and decompose anaerobically (without oxygen) instead of in their natural state through composting. Just as the transportation of goods produces greenhouse gas emissions so does the transportation of waste as more and more trucks are needed to pick up and haul our garbage to landfills or incinerators.

Sending recyclable materials to the landfill or incinerator also means we're throwing away valuable resources. If we can harvest these materials from our waste it reduces the need to mine more metals from the earth or harvest more trees from the forest. As resources become more scarce and ecosystems become more fragile, it's that much more important that we conserve what we already have and put it to its highest use.

BASELINE NUMBERS

Vancouver sends approximately 480,000 tonnes of waste to landfill or incinerator each year. That's enough to fill a line of garbage trucks from Vancouver City Hall to Kamloops.

About half of this waste comes from industrial, commercial, or institutional sources. About one third comes from residents and the rest comes from demolition, land clearing, and construction.

GREEN JOBS

- waste reduction consultant
- e-waste specialist
- building deconstruction labourer
- recycling facility operator
- lending library staff
- reuse centre staff
- waste technician
- waste collector
- compost collector
- recycling materials handler
- supply chain manager
- building manager
- policy analyst and researcher
- educator

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Zero Waste actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Expand the food scraps composting program for residents.* This action includes collecting all food scraps from single-family homes and piloting food scraps collection programs in apartments and condominiums.
2. *Develop education and enforcement programs to keep recyclables out of the waste stream.* This action builds on existing regulations to keep glass, metals, paper, and some plastics from the City's garbage collection. It includes tactics to raise awareness about the importance of waste reduction and recycling, community-based social marketing to overcome barriers, cooperation with community groups, and enforcement of disposal bans at the household and business level.
3. *Advocate for more Extended Producer Responsibility programs for packaging and more.* Through research and advocacy, the City will encourage the Province to require companies to take responsibility for recycling the products and packaging they put on the market.
4. *Develop a building deconstruction program.* This action focuses on policies to prevent wood and other materials from being sent to the landfill or incinerator through a process that takes apart buildings and salvages materials, rather than a traditional demolition method.

KEY STRATEGIES TO 2020

Moving Vancouver toward a zero waste future is going to require changing behaviours and changing the system so that the least wasteful options are the most convenient. The key strategies to reach the Zero Waste targets include:

Nurture a zero waste culture

Through a combination of education, collaboration, and enforcement, this strategy aims to change Vancouver residents' attitudes and choices about the waste they produce.

Actions include: collaborating with Metro Vancouver to develop education programs; enforcing disposal bans at the household and business level; supporting community assets and infrastructure like lending libraries, recycling drop-off locations, and neighbourhood composters; and inviting organizations and community groups to adopt the 2020 Zero Waste target for their own operations.

Make reducing and reusing a priority

The first two of the "three Rs"—reducing and reusing—are even more important for a zero waste society than recycling. This strategy helps to avoid the extraction of raw resources and conserves the energy used to produce new products.

Actions include: grants for sharing co-ops and lending libraries for things like tools, toys, and vehicles; a centre for salvaged building materials that could incubate new reuse and recycling markets; and advocacy at the provincial level for manufacturers to reduce packaging and to adopt cradle-to-cradle designs that extend the life of consumer goods.

Capture the compostables

Food scraps, compostable paper, yard trimmings, and other organics make up about a third of Vancouver's waste stream. Capturing these organic materials represents the greatest near-term opportunity for reducing waste that goes to landfill or incinerator.

Actions include: collecting the full spectrum of food scraps and compostable paper from single-family households; piloting a collection program for compostables from apartments and condominiums; and ensuring compostables are collected from all apartments, condominiums, businesses, and institutions by 2015.

Be a catalyst for Extended Producer Responsibility (EPR)

EPR, also known as product stewardship or take-back programs, can be seen in actions like our deposit system on cans and bottles. Under EPR programs, manufacturers are responsible for what happens to their product through its entire life, which creates the incentive to design products that last longer, have less wasteful packaging, and are easier to reuse or recycle. EPR is the key strategy for achieving the Zero Waste goal and is necessary to achieve a green economy.

Actions include: enhancing existing EPR programs through zoning and licensing processes that increase the number of take-back locations; more public education; and advocacy at the provincial level for new EPR programs for things like packaging, hazardous waste, building materials, carpet, furniture, and textiles.

Keep recyclables out of landfills and incinerators

About 13% of Vancouver's garbage consists of items such as paper, glass, metal, and some plastics that are actually banned from the landfill and incinerator and could be recycled through existing programs. Improvements in this area will make a big difference in achieving the Zero Waste goal.

Actions include: pursuing options to enforce disposal bans on recyclables at the household and business level; making recycling more convenient for apartments and condominiums; and developing a Zero Waste Certification program in collaboration with interested parties to recognize businesses and institutions that meet waste-reduction criteria.

Reduce, reuse, and recycle more construction, renovation and demolition waste

Currently, about 76% of the waste created through the construction of new buildings or the demolition of old ones is recycled or in the case of wood, used for energy. However, there is still more to be done to achieve our Zero Waste goal.

Actions include: reducing barriers to increase the salvage and reuse of building materials in construction projects; pursuing options for waste reduction and recycling at job sites, including regulation and financial incentives; and establishing more collection locations for clean wood.

Foster a closed-loop economy

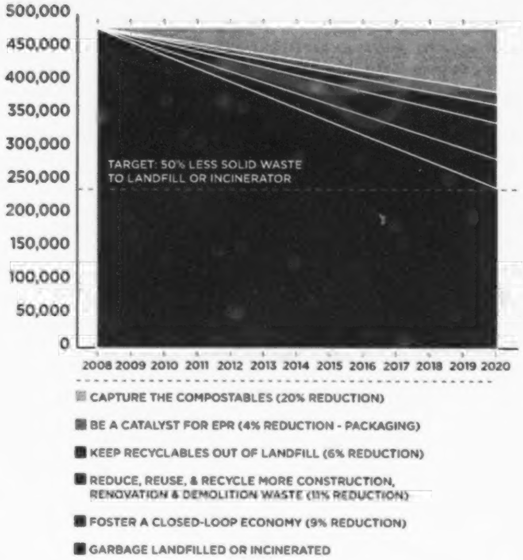
Resources such as metals, wood, and other materials currently flow in a single direction, entering our economy as products and leaving it as waste. In contrast, a closed-loop economy keeps these resources in circulation by using them in new products. This approach mirrors processes found in the natural world, which treat waste from one source as food for another.

Actions include: developing an assessment framework to ensure materials are put to their highest use (reused, recycled, or converted to energy) and greenhouse gas emissions are minimized; working with the Vancouver Economic Commission to attract recycling companies for materials that will be collected through future EPR programs; and advocating at the provincial level for policies that build markets for recycled materials.

WHAT IT'S GOING TO TAKE TO GET THERE

At a regional level, Metro Vancouver is hard at work on waste reduction and recycling strategies, and Vancouver needs to work closely with Metro in order to achieve our own target. Leadership will also be required from the businesses and residents that call Vancouver home. The Zero Waste goal is closely tied to the Greenest City goals of Green Economy, Climate Leadership, Lighter Footprint, Clean Water, and Local Food.

Pathways to 50% waste reduction target



SOURCE: Waste Diversion Opportunities - Total Waste Disposed by All Sectors: Residential, ICI & DLC (2008)

CAN VANCOUVER GO PLASTIC BAG FREE?

Under the Vancouver Charter, the City does not have the clear legal authority to ban or tax plastic bags. To reduce the use of plastic bags, the plan includes an action to form a community advisory group that will create a strategy and campaign for a plastic-bag-free Vancouver. The Province of British Columbia recently introduced legislation that will require businesses to take responsibility for the bags they distribute, starting in 2014.

"CAN I BORROW YOUR TABLE SAW?" COMMUNITY MEMBERS OPEN VANCOUVER'S FIRST TOOL LIBRARY

The Vancouver Tool Library (VTL) is a membership-based cooperative that loans a wide variety of tools for home repair, gardening, and bicycle maintenance in a format similar to a book library. Organizers plan to offer workshops and community events as well.

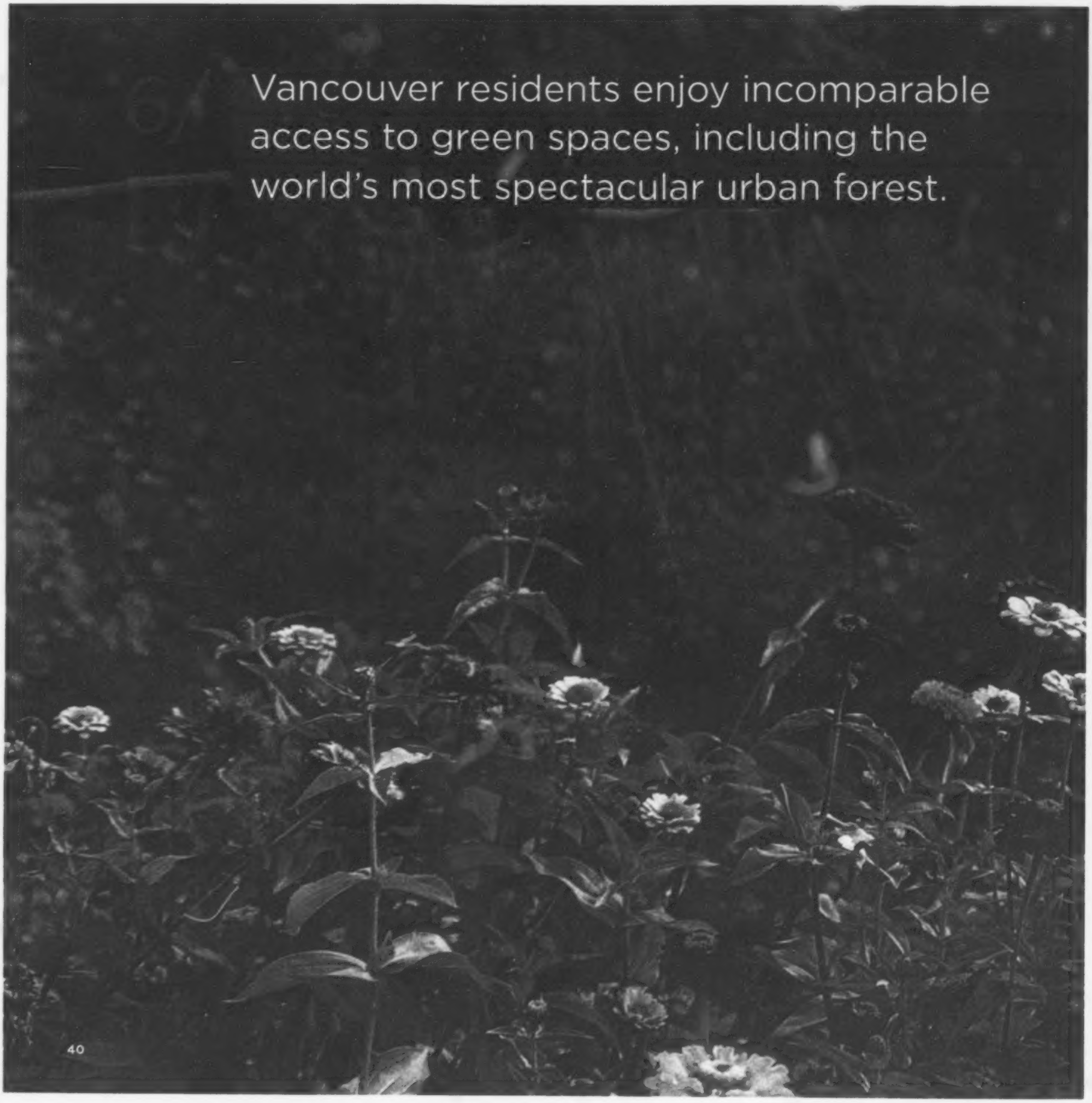
The VTL is part of a growing movement toward a "sharing economy," which is built on the idea that we can access the things we need without having to own them all ourselves. The benefits include saving money, reducing waste, and strengthening relationships within our community. Other examples include car-share programs, co-working spaces, and online creative commons.

The VTL was started by a small group of Vancouverites with a vision for a "community empowered by the tools and skills needed to transform their homes and communities into vibrant spaces that reflect a commitment to sustainability." As a member-driven organization, the VTL is supported through fundraisers, grants, and individual memberships. **vancouvertoollibrary.com**

A GOLD MINE IN OUR GARBAGE

What we call "waste" is often a valuable resource when used in another context—like the nutrients in food scraps that can be returned to the soil, or metals that can be reused in new products.

Making use of what we already have reduces the need for energy and resources during the production of new items. Recycling an aluminum can, for example, uses 95% less energy than producing one from new materials. This concept applies to large-scale manufacturing as well as personal reuse or recycling choices.



Vancouver residents enjoy incomparable access to green spaces, including the world's most spectacular urban forest.

ACCESS TO NATURE

TARGETS:

1. **ALL VANCOUVER RESIDENTS LIVE WITHIN A FIVE-MINUTE WALK OF A PARK, GREENWAY, OR OTHER GREEN SPACE BY 2020.**
2. **PLANT 150,000 NEW TREES BY 2020.**

Just over a hundred years ago, Vancouver was a forest of western red cedar and Douglas-fir trees growing hundreds of feet tall. Today, the beauty of the natural world continues to influence Vancouver's identity and contribute to our reputation as one of the world's most livable cities.

Anyone who has walked through a park on the first sunny day of spring has experienced the importance of green spaces to the health of individuals and communities. Whether they take the form of a community garden, a city park, a greenway along your block or the seawall, green spaces have been shown to benefit our physical and emotional health by reducing blood pressure, cholesterol, and stress. These spaces also contribute to our sense of community by creating places for recreation activities, for children to play and for neighbours to meet and socialize.

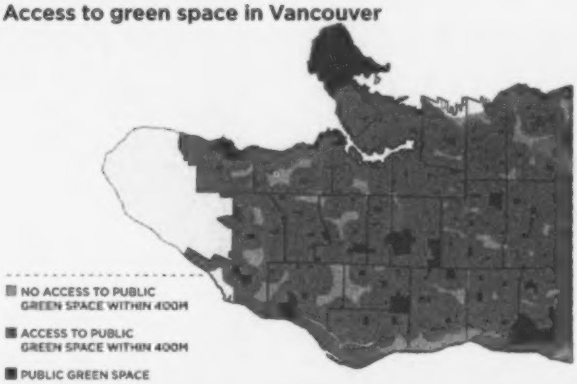
BASELINE NUMBERS

Currently, about 92% of city residents live within a five-minute walk of a park or green space. Green space can include parks and fields, greenways, the seawall, street mini-parks, natural green spaces, as well as park-like spaces such as the grounds around institutional buildings like City Hall, hospitals, and schools. It also includes linear green space such as the seawall and the extensive Champlain Heights walkway system.

The City of Vancouver has planted an average of about 2,000 new street trees each year for the last 20 years, with about 2,800 planted in 2011, a modest increase over recent years. The tree type, age, caretaking history, and other data is carefully collected for all of Vancouver's 138,000 street trees. This information is managed by the Park Board to ensure a healthy urban forest. The number of trees planted in parks, on other public properties (the Vancouver School Board, for example) and private properties is not currently tracked.

The intention behind the 150,000 trees target is to expand and enhance Vancouver's urban forest. This target contributes to increased wildlife habitat, decreased stormwater runoff, and increased food production.

Access to green space in Vancouver


▨ NO ACCESS TO PUBLIC GREEN SPACE WITHIN 400M
▨ ACCESS TO PUBLIC GREEN SPACE WITHIN 400M
■ PUBLIC GREEN SPACE

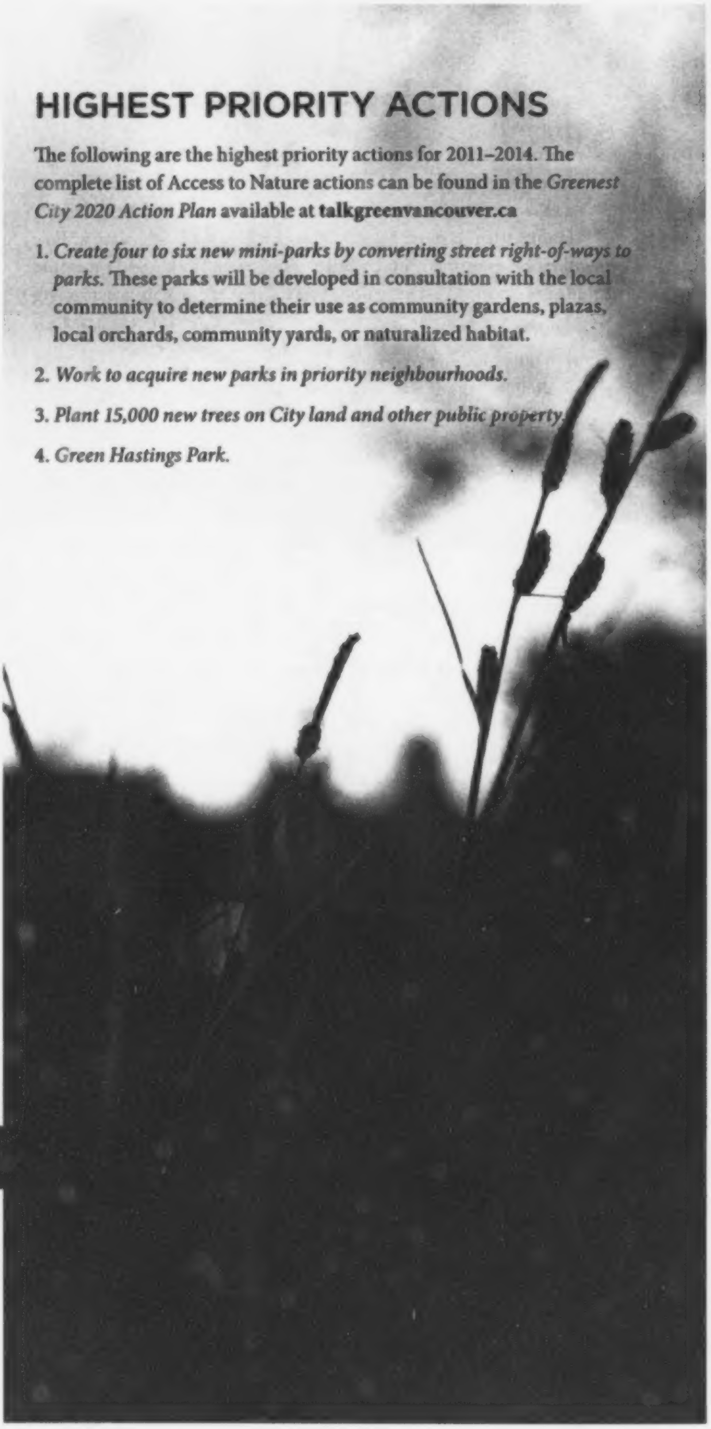
GREEN JOBS

- habitat restoration specialist
- tree planter/landscaper
- arborist
- integrated pest management specialist
- landscape architect
- contractor/labourer
- policy analyst and researcher
- educator

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Access to Nature actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Create four to six new mini-parks by converting street right-of-ways to parks.* These parks will be developed in consultation with the local community to determine their use as community gardens, plazas, local orchards, community yards, or naturalized habitat.
2. *Work to acquire new parks in priority neighbourhoods.*
3. *Plant 15,000 new trees on City land and other public property.*
4. *Green Hastings Park.*



KEY STRATEGIES TO 2020

Reaching the Access to Nature targets will require planting more trees on our streets and in our backyards and public spaces, as well as adding more green space to our existing neighbourhoods. Since these actions happen at a local level, a robust public engagement process where local community groups, residents, schools, businesses and staff are actively involved in this transformation will be necessary to achieve success.

Build and upgrade parks and greenways

Strategies to achieve a five-minute walk to a park or greenway include converting flanking or underutilized streets into mini-parks, building new parks in park-deficient neighbourhoods, and upgrading bikeways into greenways through additions such as new trees, public art and water fountains.

Plant trees

In order to plant 150,000 new trees, we need to develop an Urban Forest Management Plan. The urban forest includes all the trees in the city, including those on streets, in parks and in backyards. This plan will help guide the management and growth of the forest while setting out planting guidelines, recommendations for tree bylaw changes, and ideas for tree planting programs on private land.

Focus neighbourhood by neighbourhood

These strategies will be rolled out locally. Every year, two neighbourhoods will be selected starting with those that are the most park- and tree-deficient and have recently undergone a community planning process. The one-year goals for these neighbourhoods are to ensure:

- Every suitable space in a street or park is planted with a tree.
- Many trees are planted on private property.
- There are enough green spaces to ensure everyone lives within a five-minute walk of a park, greenway, or other green space.

This will be done in partnership with local residents. The community will be invited to work with City staff to decide where additional green space should go and how it should be designed. Local residents will also be encouraged to bring their ideas forward and to work with their neighbours to make the ideas happen.

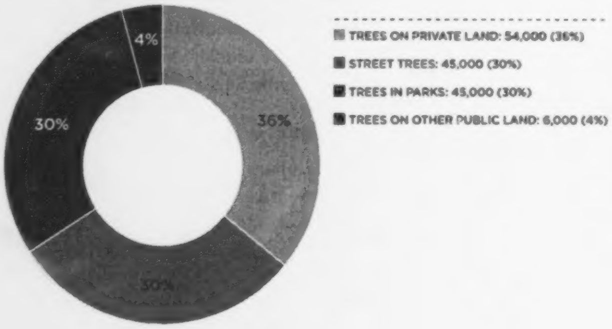
WHAT IT'S GOING TO TAKE TO GET THERE

When it comes to achieving these targets, creativity will be key. Finding land for new parks is possible but can be challenging, so we'll need innovative ways, such as neighbourhood-scale mini-parks, to ensure that all Vancouver residents have accessible green space.

The City has the capacity to modestly increase the number of street trees that are planted on its properties. It will need to work with other public landholders like the Vancouver School Board and the Vancouver Coastal Health Authority to increase trees planted in other public spaces. The City will also need to work closely with private property owners to encourage tree planting and stewardship.

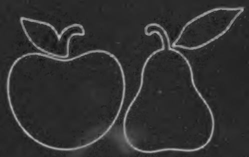
The Access to Nature goal is closely connected to several other Greenest City goals including Green Economy, Climate Leadership, Green Transportation, Lighter Footprint, Clean Air, and Local Food.

Planting an urban forest: a breakdown of where 150,000 new trees will be planted



LET'S START PLANTING

Planting 150,000 new trees is the equivalent of one tree planted for every four Vancouver residents.



HAVE YOUR TREES AND EAT THEM TOO (OR AT LEAST THE FRUIT)

Vancouver's Park Board has begun to provide more opportunities for food production in the park system, in response to community requests and the *Greenest City 2020 Action Plan*.

New community gardens have recently been designed and installed in Mount Pleasant Park, as well as on the roof top of the West End Community Centre. There are fruit and nut trees throughout many of Vancouver's parks, including Falaise Park, Ross Park, Memorial West Park, Fraserview Golf Course and New Brighton Park. Many other edible plants can also be found in Vancouver's parks.

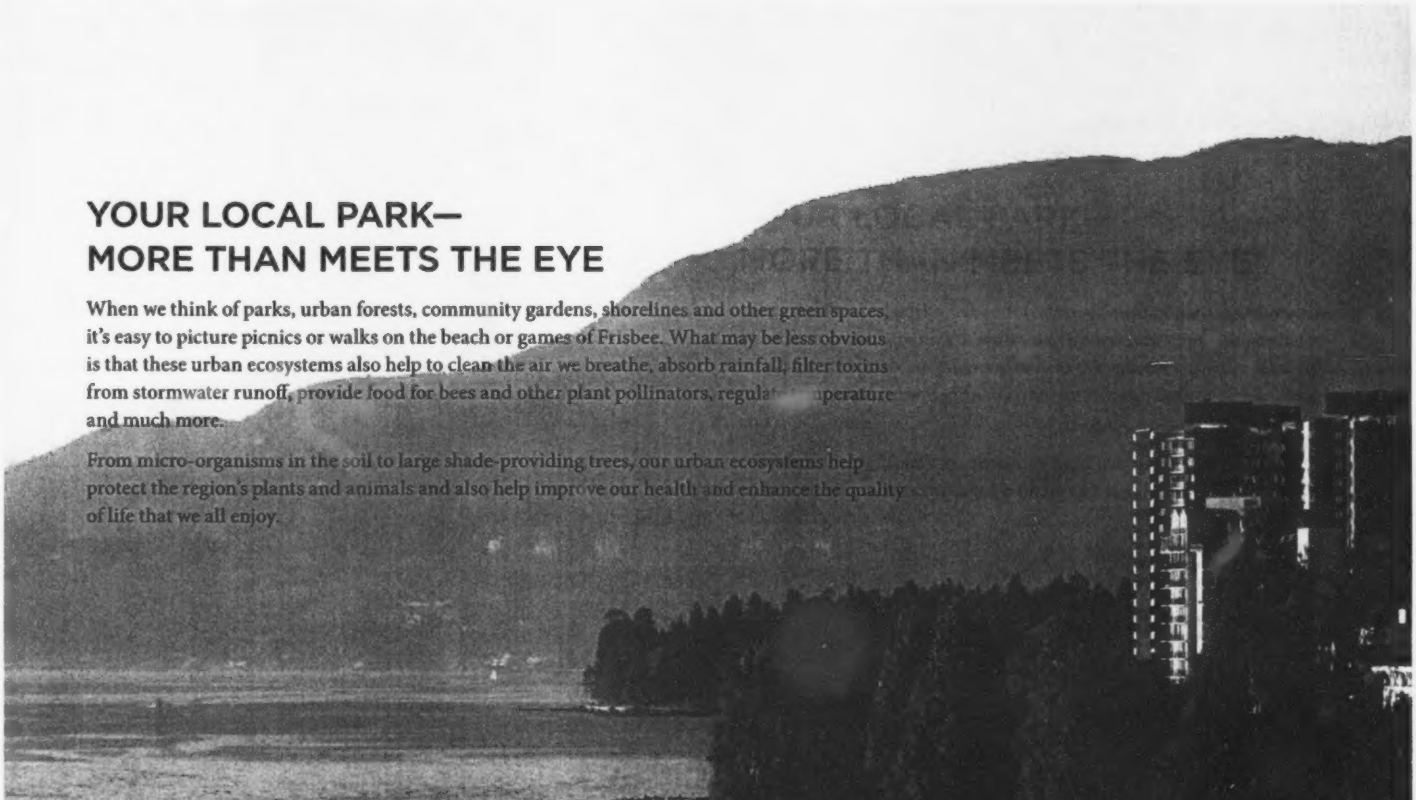
All of these food producing sites have been designed, and are stewarded, in close collaboration with community organizations and students to ensure that the food is harvested and used.

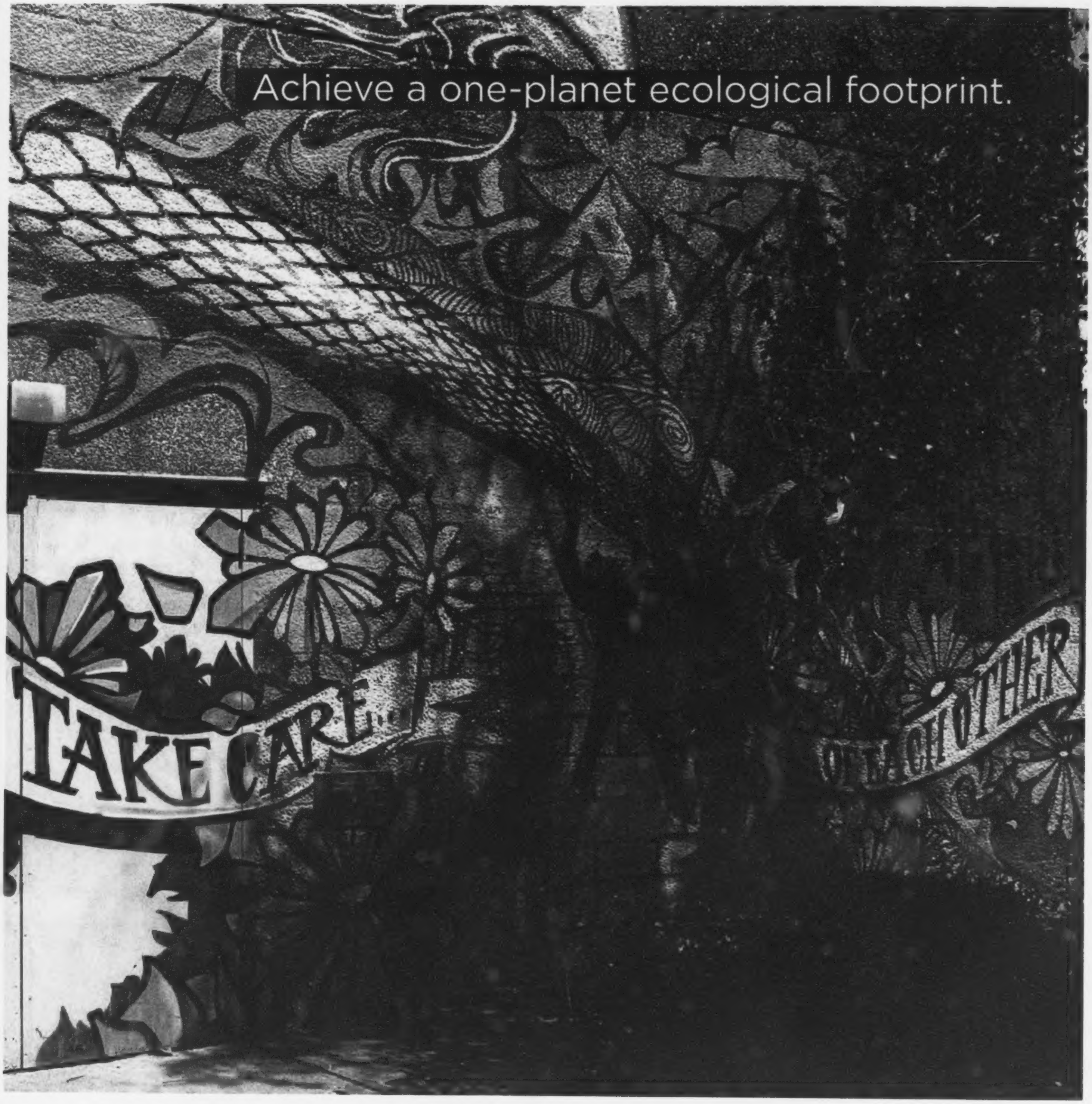
From micro-organisms in the soil to large shade-providing trees, our urban eco-systems help protect the region's plants and animals and help enhance the quality of life that we all enjoy.

YOUR LOCAL PARK—MORE THAN MEETS THE EYE

When we think of parks, urban forests, community gardens, shorelines and other green spaces, it's easy to picture picnics or walks on the beach or games of Frisbee. What may be less obvious is that these urban ecosystems also help to clean the air we breathe, absorb rainfall, filter toxins from stormwater runoff, provide food for bees and other plant pollinators, regulate temperature and much more.

From micro-organisms in the soil to large shade-providing trees, our urban ecosystems help protect the region's plants and animals and also help improve our health and enhance the quality of life that we all enjoy.




TAKE CARE
OF EACH OTHER

Achieve a one-planet ecological footprint.

LIGHTER FOOTPRINT

TARGET:

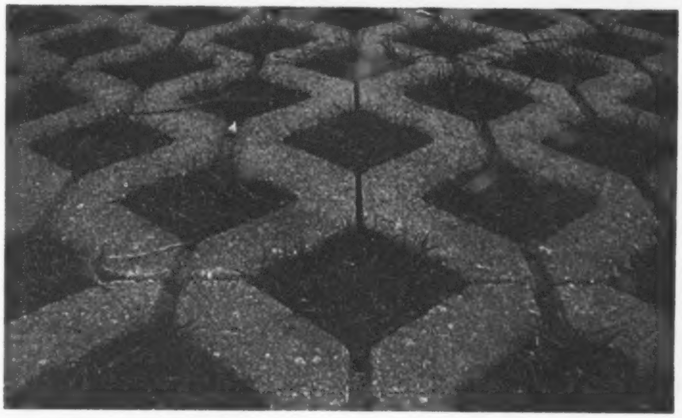
REDUCE VANCOUVER'S ECOLOGICAL FOOTPRINT BY 33% OVER 2006 LEVELS.

Everything we need comes from our one planet—what we eat, the things we buy, the way we transport ourselves, the electricity that powers our homes, the metals and plastics in our computers, the air we breathe…it's a long list. The amount of productive land and sea resources we use to meet these needs is called our "ecological footprint." It measures the impact of our actions against the reality of our planet's finite ability to provide for us.

Imagine if you had just under two hectares of land and sea to provide you with all these goods and services and to absorb all the waste you produce in the course of your life this year. If you divide up the earth's biologically productive capacity by the number of people on our planet, this is about how much land we each get. It's equivalent to an area the size of Stanley Park supporting about 200 people.

Reducing our ecological footprint is about living within ecological limits, and it is also about using a "fair Earth share" of resources. It is about striving for a one-planet footprint *and* a city that is vibrant, healthy, safe, and just.

bike vancouver

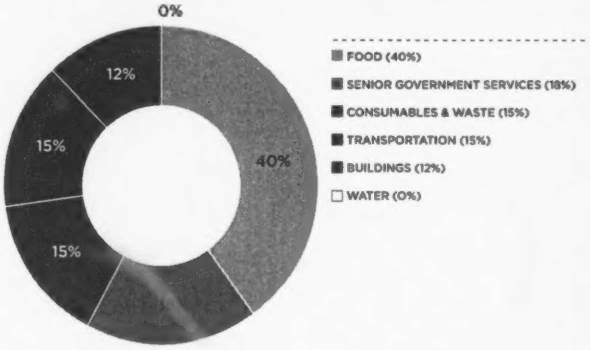


BASELINE NUMBERS

On average, Vancouver residents use about three times more land and sea resources than our fair share. If everyone lived the way we do, we'd need more than three planets to sustain us. In other words, our current ecological footprint is unsustainable.

By looking at the make-up of our ecological footprint we can start to see what kinds of choices will have the biggest impact on our one-planet goal. Choosing food that is local and lower on the food chain are two examples. Our transportation choices, the things we purchase, and the way we handle waste are other areas that have a big impact on our footprint.

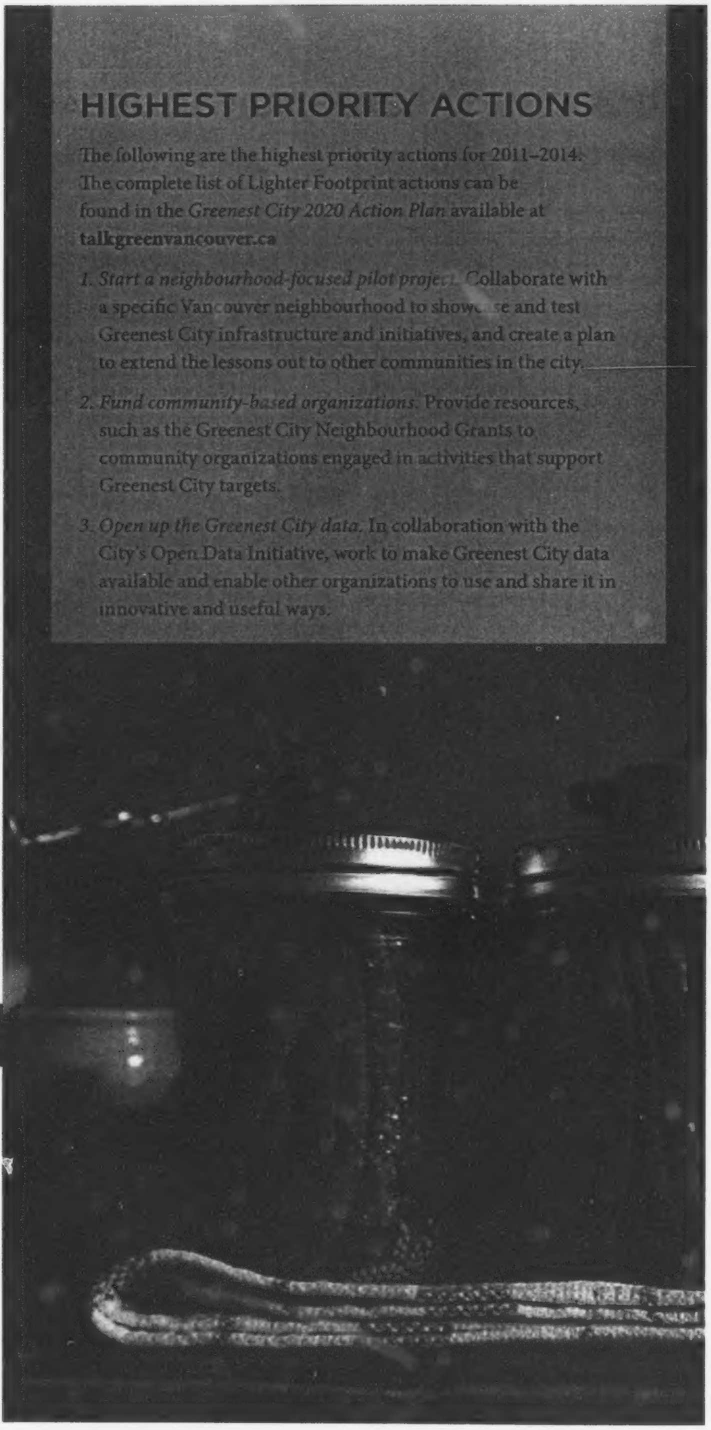
What's in Vancouver's ecological footprint?



SOURCE: Using data from J. Moore, 2011 (in progress).

GREEN JOBS

- neighbourhood pilot program coordinator
- community-based repair person
- engagement and monitoring tool developer
- sustainability consultant
- community planner
- grants administrator
- policy analyst and researcher
- educator



HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Lighter Footprint actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Start a neighbourhood-focused pilot project.* Collaborate with a specific Vancouver neighbourhood to showcase and test Greenest City infrastructure and initiatives, and create a plan to extend the lessons out to other communities in the city.
2. *Fund community-based organizations.* Provide resources, such as the Greenest City Neighbourhood Grants to community organizations engaged in activities that support Greenest City targets.
3. *Open up the Greenest City data.* In collaboration with the City's Open Data Initiative, work to make Greenest City data available and enable other organizations to use and share it in innovative and useful ways.

KEY STRATEGIES TO 2020

Measure and report

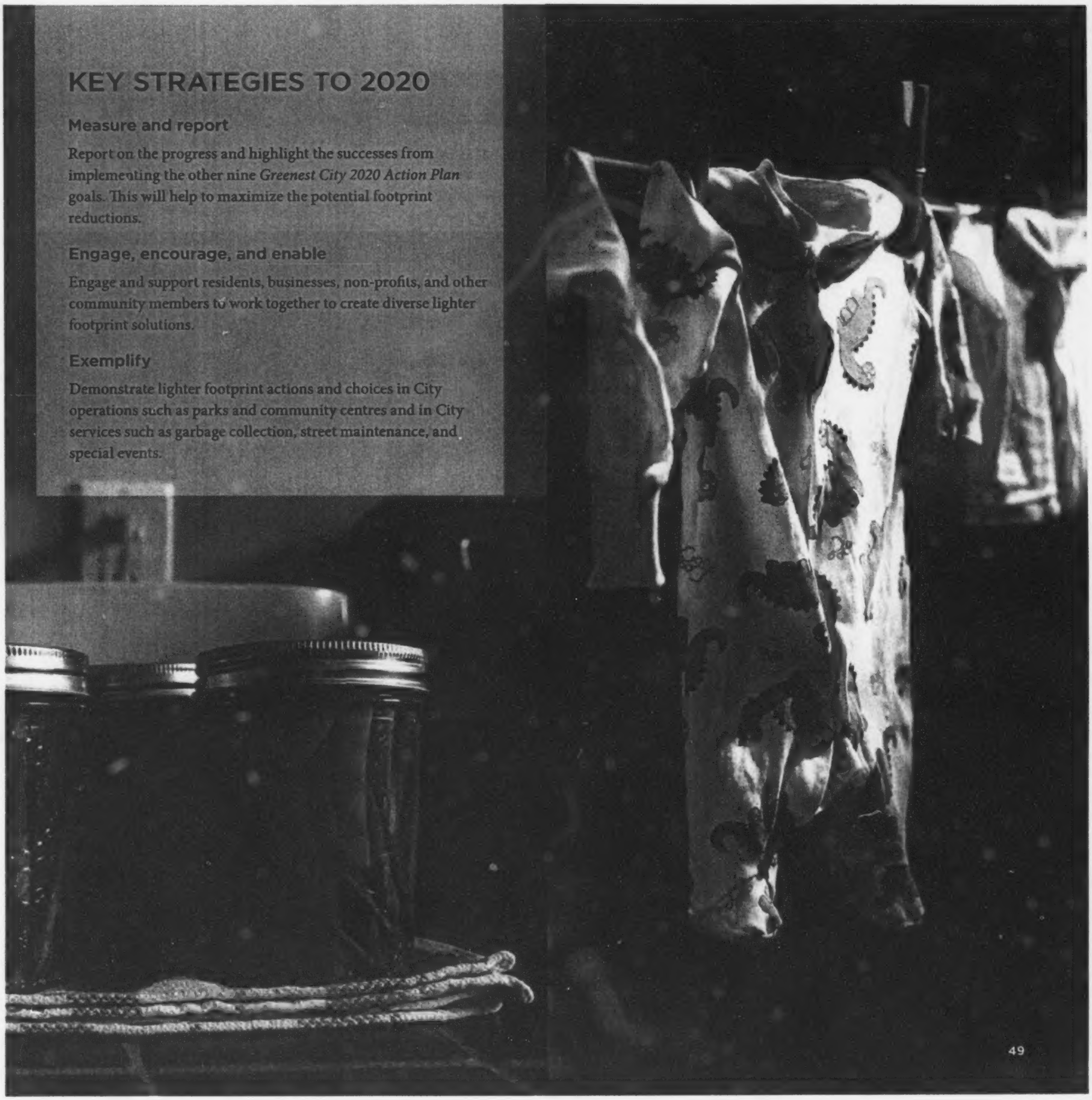
Report on the progress and highlight the successes from implementing the other nine *Greenest City 2020 Action Plan* goals. This will help to maximize the potential footprint reductions.

Engage, encourage, and enable

Engage and support residents, businesses, non-profits, and other community members to work together to create diverse lighter footprint solutions.

Exemplify

Demonstrate lighter footprint actions and choices in City operations such as parks and community centres and in City services such as garbage collection, street maintenance, and special events.

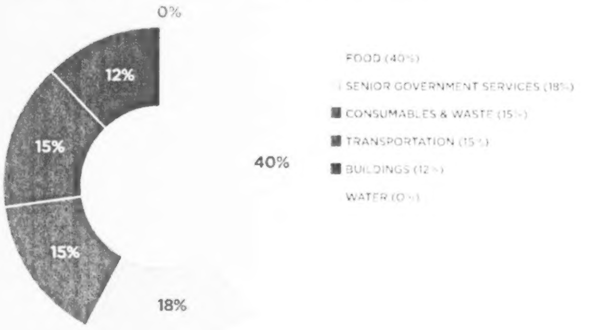


BASELINE NUMBERS

On average, Vancouver residents use about three times more land and sea resources than our fair share. If everyone lived the way we do, we'd need more than three planets to sustain us. In other words, our current ecological footprint is unsustainable.

By looking at the make-up of our ecological footprint we can start to see what kinds of choices will have the biggest impact on our one-planet goal. Choosing food that is local and lower on the food chain are two examples. Our transportation choices, the things we purchase, and the way we handle waste are other areas that have a big impact on our footprint.

What's in Vancouver's ecological footprint?



SOURCE: Using data from J. Moore, 2011 (in progress).

GREEN JOBS

- neighbourhood pilot program coordinator
- community-based repair person
- engagement and monitoring tool developer
- sustainability consultant
- community planner
- grants administrator
- policy analyst and researcher
- educator

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Lighter Footprint actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Start a neighbourhood-focused pilot project.* Collaborate with a specific Vancouver neighbourhood to showcase and test Greenest City infrastructure and initiatives, and create a plan to extend the lessons out to other communities in the city.
2. *Fund community-based organizations.* Provide resources, such as the Greenest City Neighbourhood Grants to community organizations engaged in activities that support Greenest City targets.
3. *Open up the Greenest City data.* In collaboration with the City's Open Data Initiative, work to make Greenest City data available and enable other organizations to use and share it in innovative and useful ways.

KEY STRATEGIES TO 2020

Measure and report

Report on the progress and highlight the successes from implementing the other nine *Greenest City 2020 Action Plan* goals. This will help to maximize the potential footprint reductions.

Engage, encourage, and enable

Engage and support residents, businesses, non-profits, and other community members to work together to create diverse lighter footprint solutions.

Exemplify

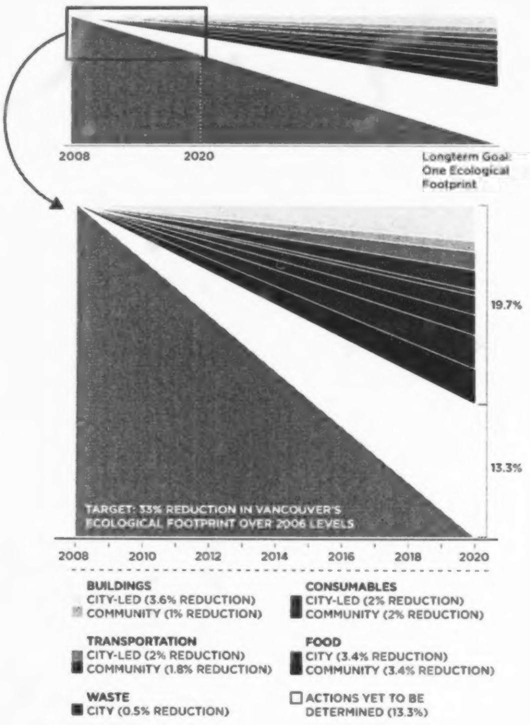
Demonstrate lighter footprint actions and choices in City operations such as parks and community centres and in City services such as garbage collection, street maintenance, and special events.

WHAT IT'S GOING TO TAKE TO GET THERE

The Lighter Footprint goal and target connect to many of the other Greenest City goal areas. Specific targets and actions in the Green Building, Green Transportation, Zero Waste, and Local Food plans will have a positive impact on reducing our ecological footprint. However, the City's ability to influence the decisions that will lead to a reduced footprint is limited.

The work to meet this goal and target is an opportunity for creativity and leadership from other levels of government, as well as from businesses and local residents.

Wedge analysis of the reduction in ecological footprint expected from proposed GCAP actions



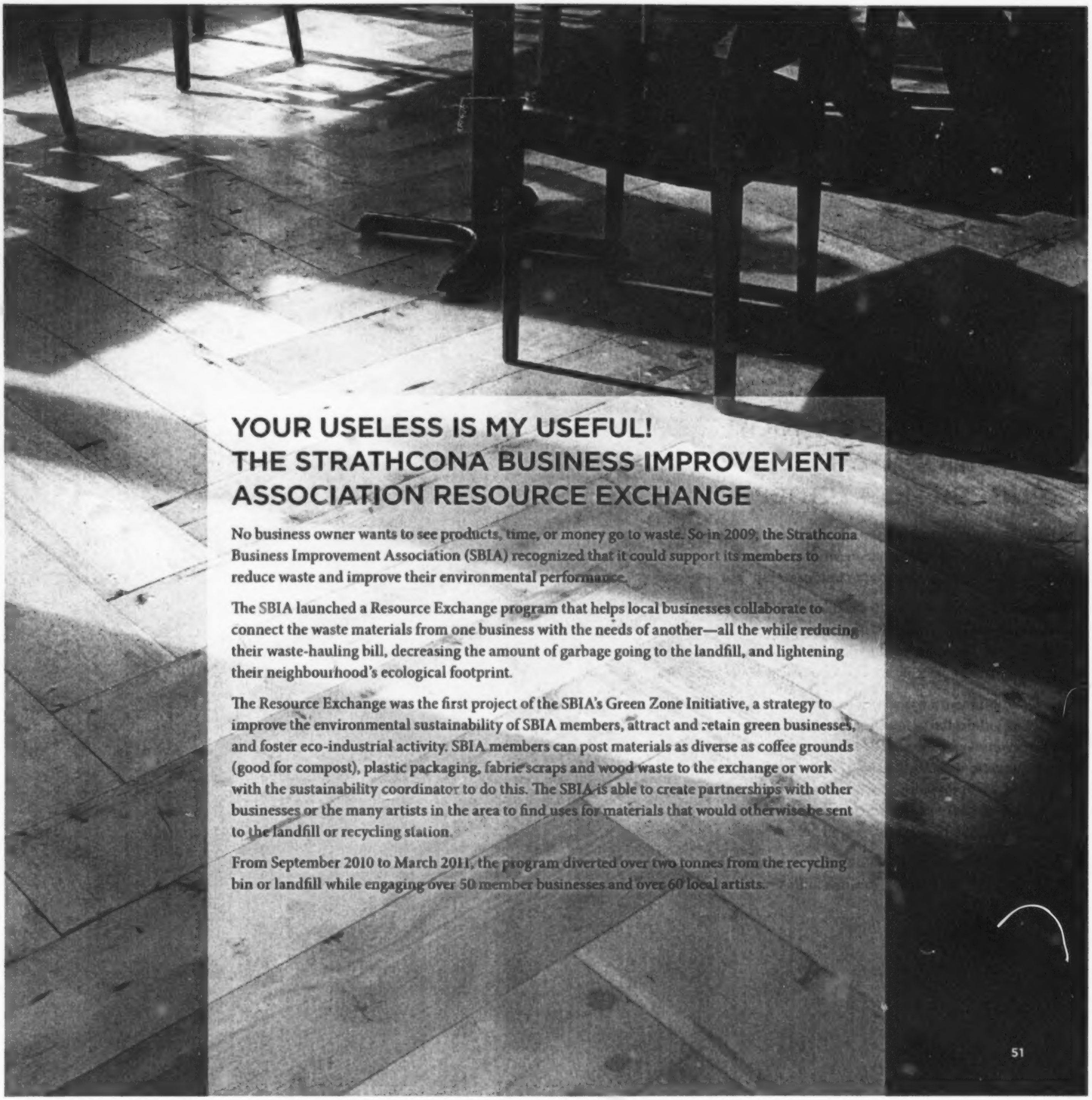
SOURCE: Using data from J. Moore, 2011 (in progress).

HOW DO WE BECOME A ONE-PLANET CITY?

Vancouver is one of many cities around the world that are working hard to answer this question. There are no easy answers and no one-size-fits-all approach.

On their own, City-led actions can only achieve about one third of the target. The active participation of the whole community, including individuals, businesses, and other organizations will be essential for achieving the remaining two thirds. That's why the actions in this plan are focused on supporting partnerships to create the tools, resources and opportunities for all of us, in our own way, to meet this challenge and succeed.

> More and more cities are asking the question, "How do we live within our fair Earth share?"



YOUR USELESS IS MY USEFUL! THE STRATHCONA BUSINESS IMPROVEMENT ASSOCIATION RESOURCE EXCHANGE

No business owner wants to see products, time, or money go to waste. So in 2009, the Strathcona Business Improvement Association (SBIA) recognized that it could support its members to reduce waste and improve their environmental performance.

The SBIA launched a Resource Exchange program that helps local businesses collaborate to connect the waste materials from one business with the needs of another—all the while reducing their waste-hauling bill, decreasing the amount of garbage going to the landfill, and lightening their neighbourhood's ecological footprint.

The Resource Exchange was the first project of the SBIA's Green Zone Initiative, a strategy to improve the environmental sustainability of SBIA members, attract and retain green businesses, and foster eco-industrial activity. SBIA members can post materials as diverse as coffee grounds (good for compost), plastic packaging, fabric scraps and wood waste to the exchange or work with the sustainability coordinator to do this. The SBIA is able to create partnerships with other businesses or the many artists in the area to find uses for materials that would otherwise be sent to the landfill or recycling station.

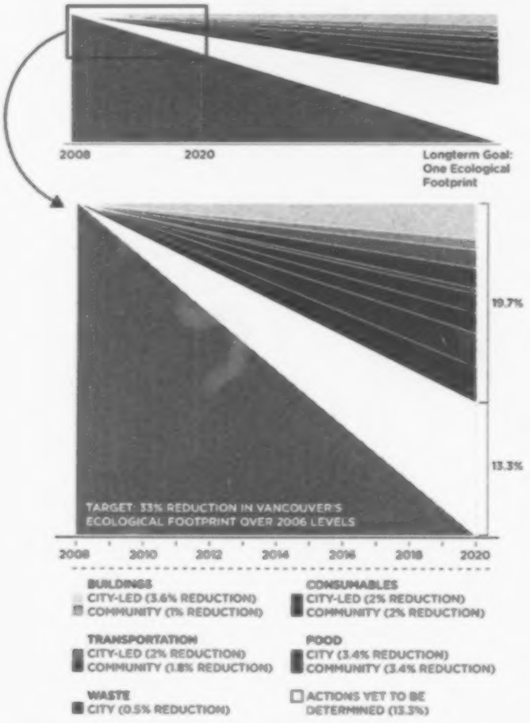
From September 2010 to March 2011, the program diverted over two tonnes from the recycling bin or landfill while engaging over 50 member businesses and over 60 local artists.

WHAT IT'S GOING TO TAKE TO GET THERE

The Lighter Footprint goal and target connect to many of the other Greenest City goal areas. Specific targets and actions in the Green Building, Green Transportation, Zero Waste, and Local Food plans will have a positive impact on reducing our ecological footprint. However, the City's ability to influence the decisions that will lead to a reduced footprint is limited.

The work to meet this goal and target is an opportunity for creativity and leadership from other levels of government, as well as from businesses and local residents.

Wedge analysis of the reduction in ecological footprint expected from proposed GCAP actions



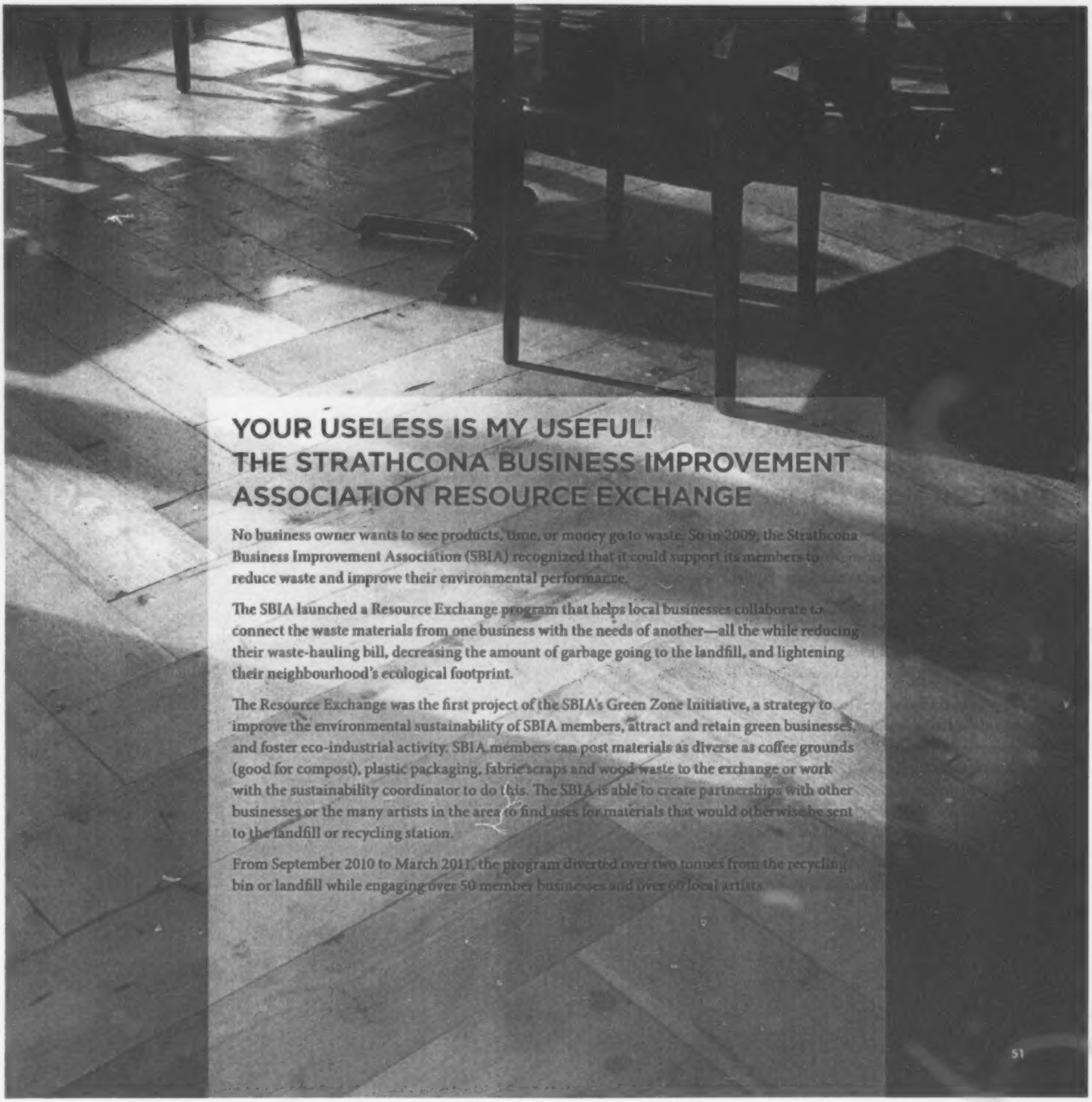
SOURCE: Using data from J. Moore, 2011 (in progress).

HOW DO WE BECOME A ONE-PLANET CITY?

Vancouver is one of many cities around the world that are working hard to answer this question. There are no easy answers and no one-size-fits-all approach.

On their own, City-led actions can only achieve about one third of the target. The active participation of the whole community, including individuals, businesses, and other organizations will be essential for achieving the remaining two thirds. That's why the actions in this plan are focused on supporting partnerships to create the tools, resources and opportunities for all of us, in our own way, to meet this challenge and succeed.

> More and more cities are asking the question, "How do we live within our fair Earth share?"



YOUR USELESS IS MY USEFUL!
THE STRATHCONA BUSINESS IMPROVEMENT ASSOCIATION RESOURCE EXCHANGE

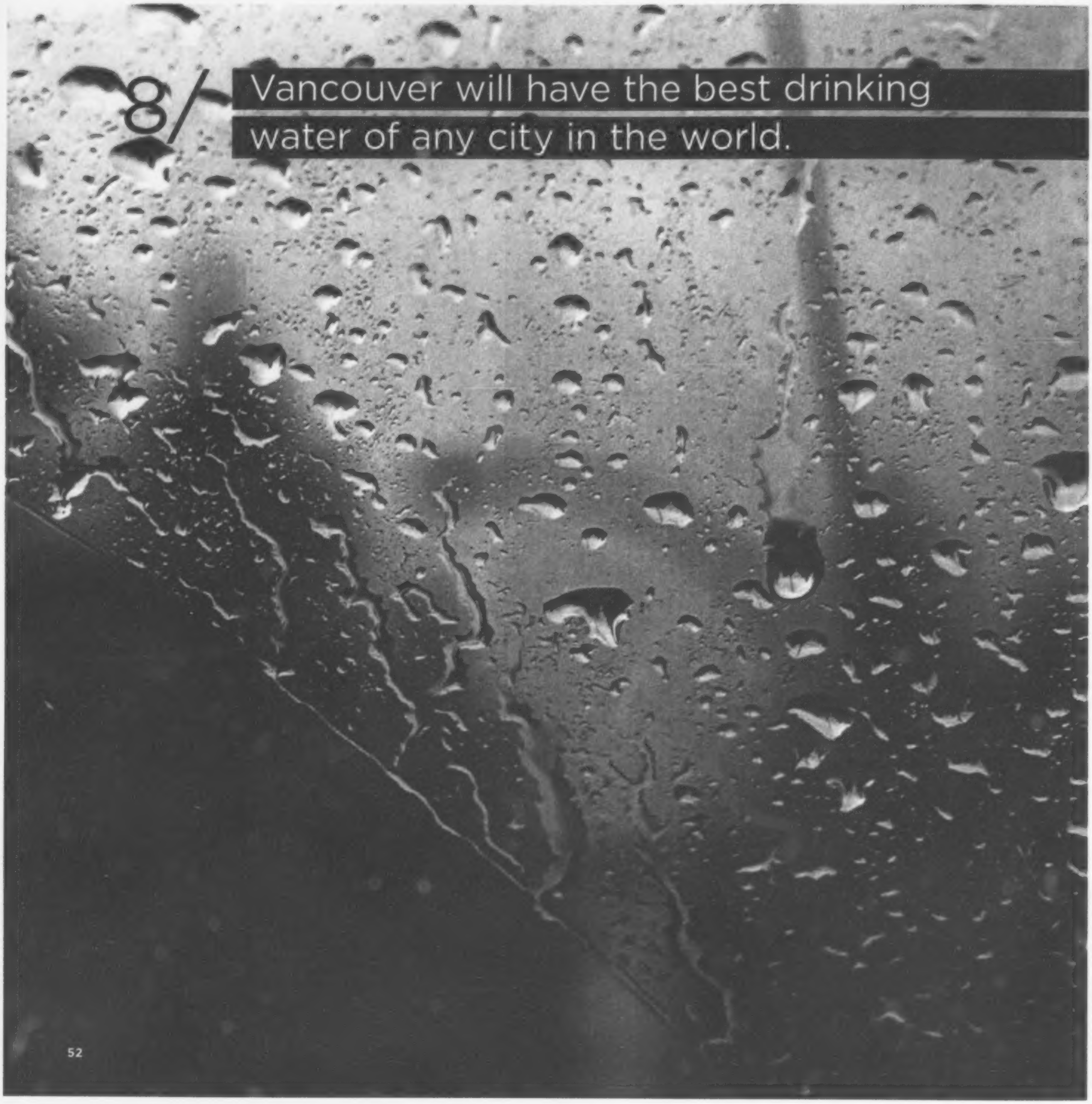
No business owner wants to see products, time, or money go to waste. So in 2009, the Strathcona Business Improvement Association (SBIA) recognized that it could support its members to reduce waste and improve their environmental performance.

The SBIA launched a Resource Exchange program that helps local businesses collaborate to connect the waste materials from one business with the needs of another—all the while reducing their waste-hauling bill, decreasing the amount of garbage going to the landfill, and lightening their neighbourhood's ecological footprint.

The Resource Exchange was the first project of the SBIA's Green Zone Initiative, a strategy to improve the environmental sustainability of SBIA members, attract and retain green businesses, and foster eco-industrial activity. SBIA members can post materials as diverse as coffee grounds (good for compost), plastic packaging, fabric scraps and wood waste to the exchange or work with the sustainability coordinator to do this. The SBIA is able to create partnerships with other businesses or the many artists in the area to find uses for materials that would otherwise be sent to the landfill or recycling station.

From September 2010 to March 2011, the program diverted over two tonnes from the recycling bin or landfill while engaging over 50 member businesses and over 60 local artists.

8/ Vancouver will have the best drinking water of any city in the world.



CLEAN WATER

TARGETS:

1. **MEET OR BEAT THE STRONGEST OF BRITISH COLUMBIAN, CANADIAN, AND APPROPRIATE INTERNATIONAL DRINKING WATER QUALITY STANDARDS AND GUIDELINES.**
2. **REDUCE PER CAPITA WATER CONSUMPTION BY 33% FROM 2006 LEVELS.**

In Vancouver, it can be easy to take our high-quality and abundant drinking water for granted. Water is all around us—we have the Pacific Ocean, the Fraser River, many mountain lakes, and significant annual rain fall. However, factors such as population growth and climate change will impact our access to water in the future. Together, the City of Vancouver and Metro Vancouver are responsible for ensuring that current residents and future generations continue to have access to clean drinking water.

Currently, residents pay an annual fixed fee (flat rate) regardless of how much water they consume. However, industrial, commercial, institutional, and multi-family residential buildings are metered and pay for water based on the volume they use. Studies have shown that Canadians who pay flat rates consume an average of 74% more water than those who are connected to their consumption levels through a volume-based pricing system.

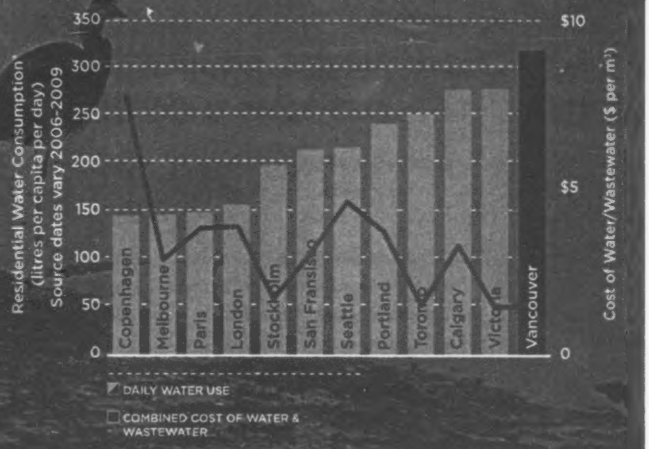
Over the next five years, Metro Vancouver will be increasing water rates by 50% to recover the costs for new water-quality initiatives. This is in addition to any volume or usage-based pricing that might be implemented.

BASELINE NUMBERS

The City of Vancouver has a well-established water quality monitoring program that involves routine testing from representative locations across the city. Our drinking water consistently meets BC's Drinking Water Protection Regulation standards and Health Canada's Guidelines for Canadian Drinking Water Quality.

Vancouver residents consume an average of 320 litres of water per day (measured in 2006). That's more than double other similar cities like Melbourne, London or Copenhagen, which have per capita consumption rates between 150 and 220 litres per day. Although total water consumption across all sectors (residential, commercial, industrial) has decreased over the last 25 years, we still have a long way to go to live within our means.

Comparison of municipal water consumption & prices

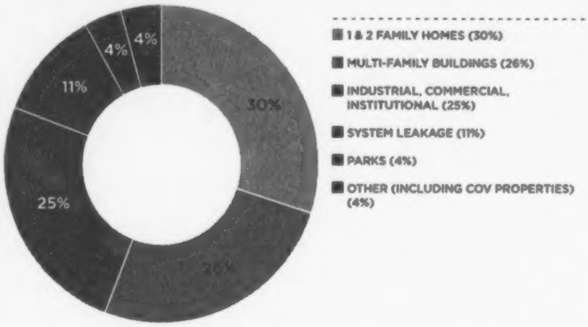


*As of January 2012, water rates for Vancouver have increased by approximately 10%

GREEN JOBS

- pilot programs manager
- retrofit and incentives program manager
- municipal water utility operator
- water leak detector
- policy analyst and researcher
- educator
- engineering assistant
- water sampler
- water quality program coordinator

Vancouver water use by sector



HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Clean Water actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Water metering for new homes.* Effective January 2012, all new single-family and two-family homes will have water meters installed and will move to volume-based pricing of their water use. Evidence shows that this leads to increased conservation.
2. *Develop and implement enhanced water education, incentive, and conservation programs.* This includes incentive programs for low-flow toilets and increased education and enforcement of lawn sprinkling regulations.
3. *Expand public access to drinking water and reduce use of bottled water.* Deploy more portable fountains, as well as permanent freeze-resistant fountains, and water bottle filling stations.
4. *Eliminate combined sewer overflows from outfalls at Crowe and Burrard streets and develop Integrated Rainwater Management Plans for the City.*

KEY STRATEGIES TO 2020

Ensuring we continue to have world class drinking water quality and a supply that meets our needs will require significant water efficiency improvements and appropriate regulation. It will also mean helping to connect people with the value and amount of water they use.

Monitor and protect water quality

This strategy will build on existing actions, such as real-time water quality monitoring for early detection of contaminants, increased testing, and the prevention of drinking water contamination.

Continue leadership and advocacy

Some of the actions here focus on developing an Integrated Rainwater Management Plan that includes infiltration and rainwater capture as well as a water use study at City and Park Board facilities to find opportunities for increased water conservation.

Expand public access to drinking water

This strategy focuses on a continued expansion of year-round public access to municipal drinking water in public spaces. This also supports the Zero Waste target by discouraging the use of bottled water.

Implement policies and programs to enhance water conservation

The City is able to encourage water conservation through regulations and accompanying education. This includes incentive and rebate programs as well as policy and regulatory changes around metering, lawn sprinkling, and building code revisions.

Engage the public, industry, and business for improved water conservation choices and habits

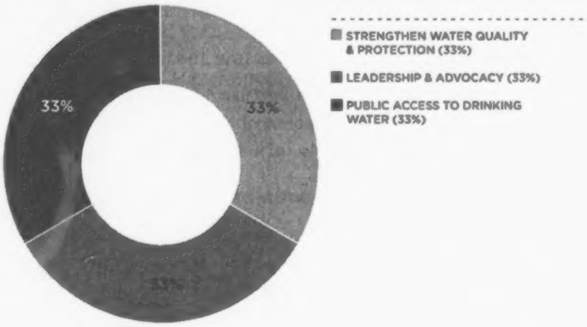
Actions in this strategy include plans for communications, education, and community-based social marketing, as well as audits of industrial, institutional, and commercial water use.

Install water-saving technology through incentives and programs

Low-flow toilets, rain sensors for sprinkler systems, and water meters are some of the many technologies that can improve water efficiency in homes and businesses. This strategy includes actions such as incentive and retrofit programs to install these tools in new and existing buildings.

WHAT IT'S GOING TO TAKE TO GET THERE

Water quality strategies

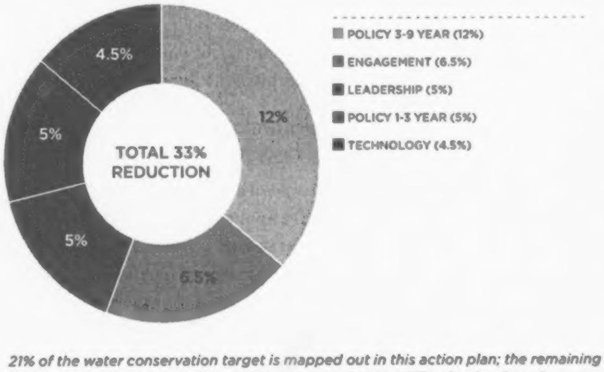


Target 1 is expected to be achieved equally by each of the three strategies.

Metro Vancouver plays a lead role in ensuring high water quality for all residents of the region. The new Seymour-Capilano Filtration Plant will protect water quality for many years to come. The City also has an important role to play in monitoring and in working with residents and businesses to protect water quality and to prevent water waste.

The Clean Water goal requires coordination with the Green Building goal and associated actions and strategies on issues of rainwater and greywater capture and use. It also recognizes the need to coordinate with Local Food actions, focusing on synergies between urban agriculture and water conservation efforts.

Water conservation strategies to achieve 33% reduction

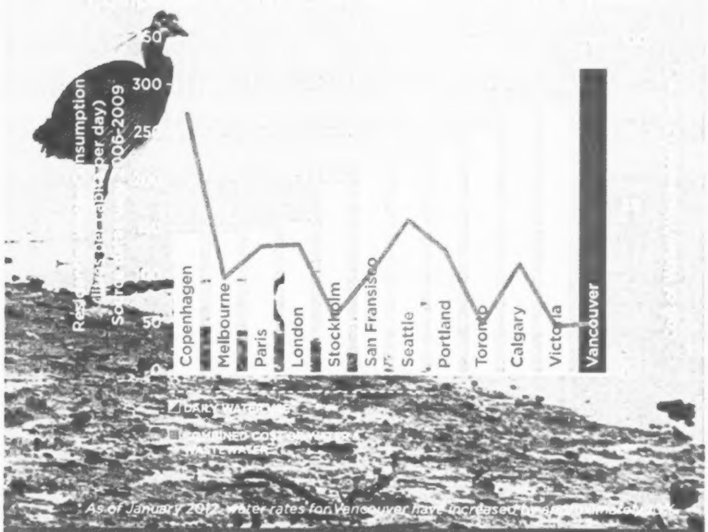


21% of the water conservation target is mapped out in this action plan; the remaining 12% will come from future policy and programs that are still to be developed.

BASELINE NUMBERS

The City of Vancouver has a well-established water quality monitoring program that involves routine testing from representative locations across the city. Our drinking water consistently meets BC's Drinking Water Protection Regulation standards and Health Canada's Guidelines for Canadian Drinking Water Quality.

Vancouver residents consume an average of 320 litres of water per day (measured in 2006). That's more than double other similar cities like Melbourne, London or Copenhagen, which have per capita consumption rates between 150 and 220 litres per day. Although total water consumption across all sectors (residential, commercial, industrial) has decreased over the last 25 years, we still have a long way to go to live within our means.

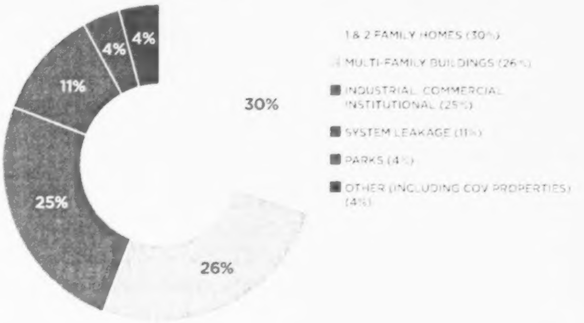


As of January 2012, water rates for Vancouver have increased by approximately

GREEN JOBS

- pilot programs manager
- retrofit and incentives program manager
- municipal water utility operator
- water leak detector
- policy analyst and researcher
- educator
- engineering assistant
- water sampler
- water quality program coordinator

Vancouver water use by sector



HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Clean Water actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Water metering for new homes.* Effective January 2012, all new single-family and two-family homes will have water meters installed and will move to volume-based pricing of their water use. Evidence shows that this leads to increased conservation.
2. *Develop and implement enhanced water education, incentive, and conservation programs.* This includes incentive programs for low-flow toilets and increased education and enforcement of lawn sprinkling regulations.
3. *Expand public access to drinking water and reduce use of bottled water.* Deploy more portable fountains, as well as permanent freeze-resistant fountains, and water bottle filling stations.
4. *Eliminate combined sewer overflows from outfalls at Crowe and Burrard streets and develop Integrated Rainwater Management Plans for the City.*

KEY STRATEGIES TO 2020

Ensuring we continue to have world class drinking water quality and a supply that meets our needs will require significant water efficiency improvements and appropriate regulation. It will also mean helping to connect people with the value and amount of water they use.

Monitor and protect water quality

This strategy will build on existing actions, such as real-time water quality monitoring for early detection of contaminants, increased testing, and the prevention of drinking water contamination.

Continue leadership and advocacy

Some of the actions here focus on developing an Integrated Rainwater Management Plan that includes infiltration and rainwater capture as well as a water use study at City and Park Board facilities to find opportunities for increased water conservation.

Expand public access to drinking water

This strategy focuses on a continued expansion of year-round public access to municipal drinking water in public spaces. This also supports the Zero Waste target by discouraging the use of bottled water.

Implement policies and programs to enhance water conservation

The City is able to encourage water conservation through regulations and accompanying education. This includes incentive and rebate programs as well as policy and regulatory changes around metering, lawn sprinkling, and building code revisions.

Engage the public, industry, and business for improved water conservation choices and habits

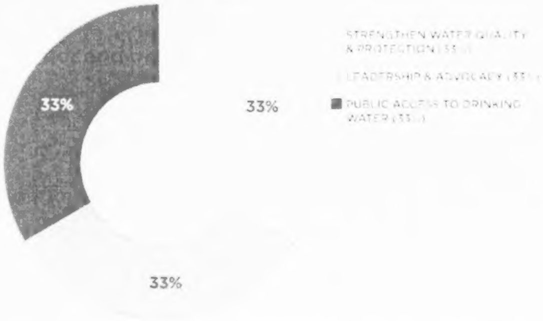
Actions in this strategy include plans for communications, education, and community-based social marketing, as well as audits of industrial, institutional, and commercial water use.

Install water-saving technology through incentives and programs

Low-flow toilets, rain sensors for sprinkler systems, and water meters are some of the many technologies that can improve water efficiency in homes and businesses. This strategy includes actions such as incentive and retrofit programs to install these tools in new and existing buildings.

WHAT IT'S GOING TO TAKE TO GET THERE

Water quality strategies

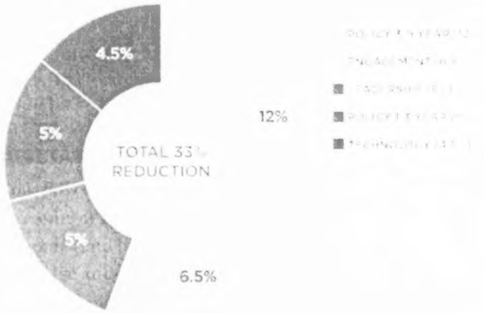


Target 1 is expected to be achieved equally by each of the three strategies

Metro Vancouver plays a lead role in ensuring high water quality for all residents of the region. The new Seymour-Capilano Filtration Plant will protect water quality for many years to come. The City also has an important role to play in monitoring and in working with residents and businesses to protect water quality and to prevent water waste.

The Clean Water goal requires coordination with the Green Building goal and associated actions and strategies on issues of rainwater and greywater capture and use. It also recognizes the need to coordinate with Local Food actions, focusing on synergies between urban agriculture and water conservation efforts.

Water conservation strategies to achieve 33% reduction



21% of the water conservation target is mapped out in this action plan, the remaining 12% will come from future policy and programs that are still to be developed

SUCCESS STORY: TAP WATER MAKES A COMEBACK

The City of Vancouver recently phased out the sale of bottled water at City Hall and other civic facilities.

Public confidence in drinking water has improved since the 2008 launch of Metro Vancouver's Tap Water campaign, which reminded residents that "our water is as good as it gets." Since then, residents have reported a 52% reduction in bottled water consumption.

THE SEWER SYSTEM AND THE WHALE

What's the connection between a sewer system and a grey whale? In the spring of 2010, Vancouver found out.

The story starts back in 1978 when Vancouver City Council established a program to begin transitioning from a combined sewer collection system to a separated one. A combined sewer system collects domestic sewage, industrial wastewater and stormwater runoff all together. Heavy rainfall can overflow the system, which sends untreated excess wastewater into local water bodies like False Creek, harming local marine life.

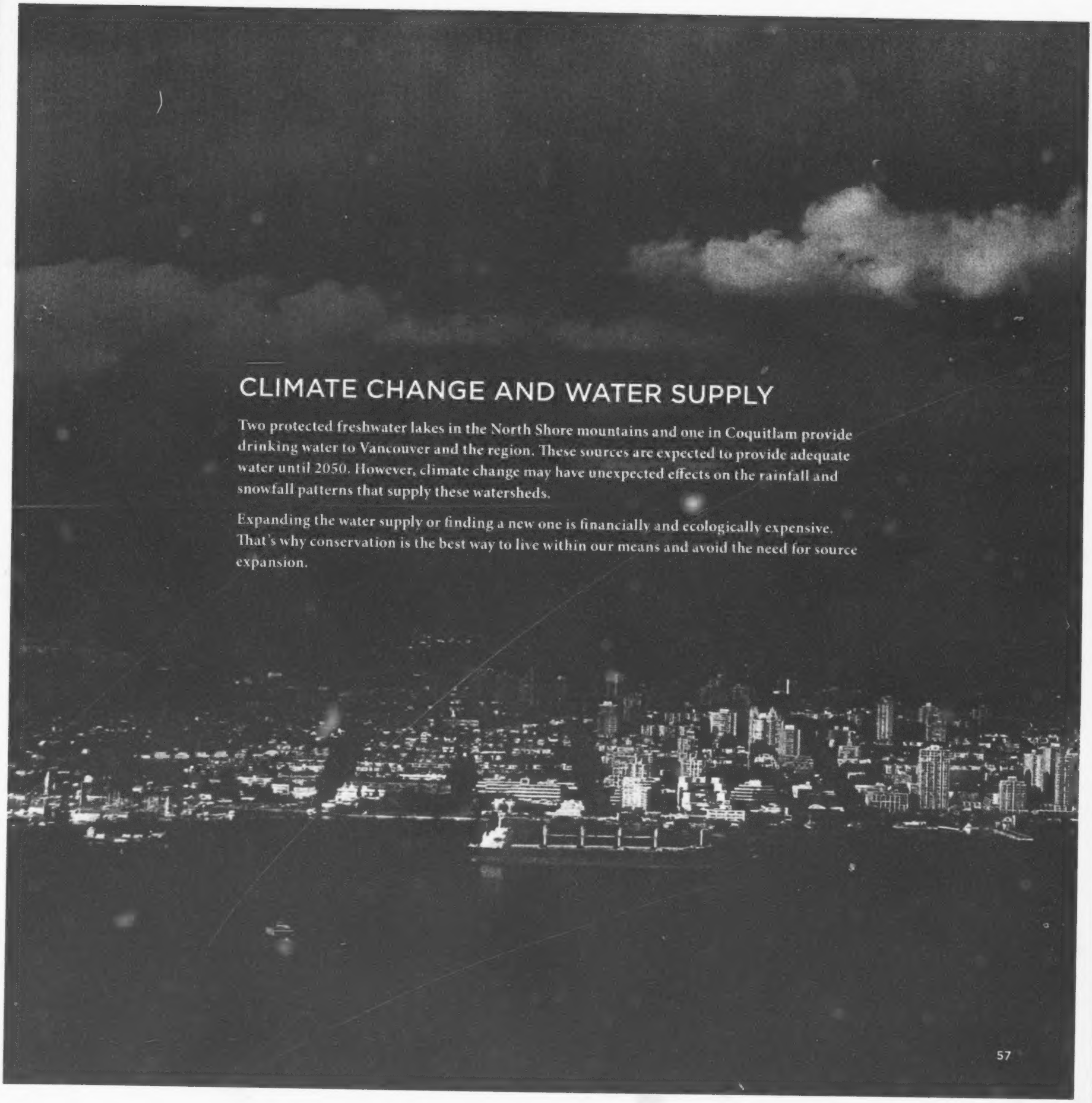
In recent years, sewer separation in False Creek has come close to completion and water quality has improved. Evidence of improved ecosystem health showed up in the spring of 2009 when a large amount of herring roe was laid along the shore of Habitat Island for the first time in many years.

The following spring, an even larger sign showed up when a grey whale appeared for the first time in 100 years. Marine biologists confirmed that the whale was feeding on herring roe and other benthic life that was able to survive in the healthier waterway.

RETURNING RAIN TO ITS NATURAL HABITAT

When rainwater is allowed to seep into the ground it reduces the water and sediment that flows through the sewers. This filters pollutants from stormwater and reduces maintenance requirements and costs for the stormwater system. It also recharges natural water systems, which helps to support fish habitat by more closely mimicking natural processes.

Cleaner creeks, healthier water tables, and a more natural aesthetic also make neighbourhoods more enjoyable places for playing, walking and cycling. Grass-based and other types of permeable pavers allow rainwater to be absorbed into the ground while maintaining a surface for vehicles and other types of traffic. Vancouver has already adopted these pavement alternatives in some areas. Other features, such as swales, can hold and absorb runoff that would otherwise enter the piped sewer system.

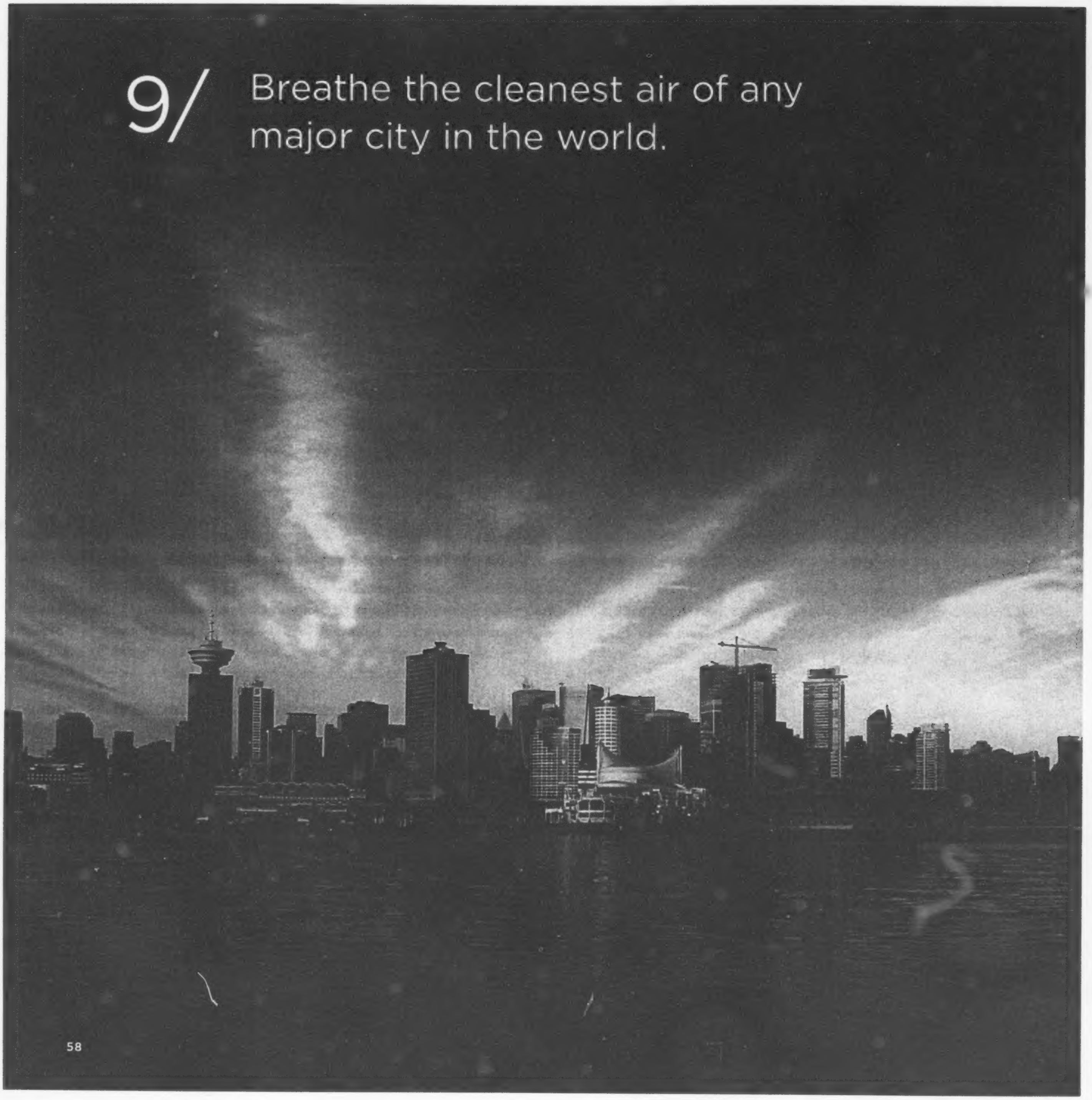


CLIMATE CHANGE AND WATER SUPPLY

Two protected freshwater lakes in the North Shore mountains and one in Coquitlam provide drinking water to Vancouver and the region. These sources are expected to provide adequate water until 2050. However, climate change may have unexpected effects on the rainfall and snowfall patterns that supply these watersheds.

Expanding the water supply or finding a new one is financially and ecologically expensive. That's why conservation is the best way to live within our means and avoid the need for source expansion.

9/ Breathe the cleanest air of any major city in the world.



CLEAN AIR

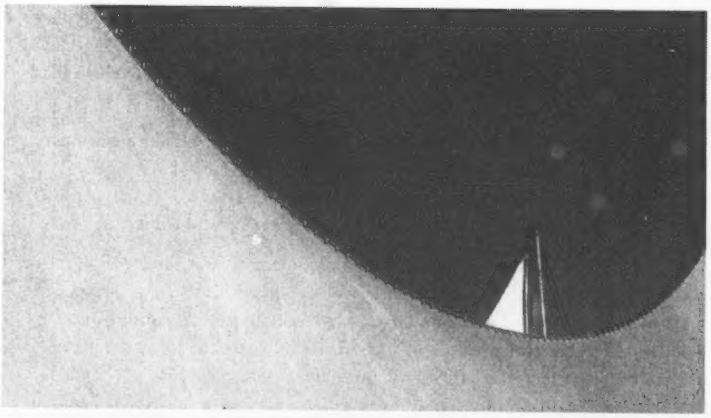
TARGET:

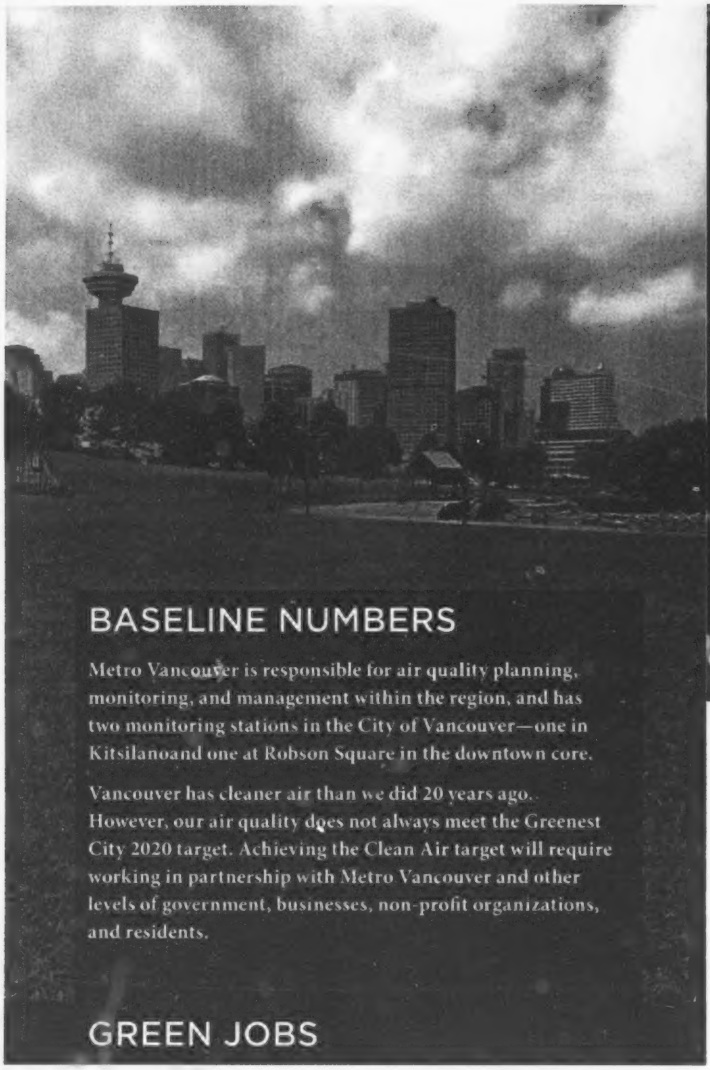
ALWAYS MEET OR BEAT THE MOST STRINGENT AIR QUALITY GUIDELINES FROM METRO VANCOUVER, BRITISH COLUMBIA, CANADA, AND THE WORLD HEALTH ORGANIZATION.

Breathing might be one of the most natural things we do. We move air in and out of our lungs anywhere from 720 to 1,200 times an hour. Clean air can be easy to take for granted, even though it has a huge impact on our health and well-being.

The quality of our air affects the health of everyone in our community, particularly young children, pregnant women, seniors, and other vulnerable populations. Although Vancouver enjoys relatively clean air compared to other major North American cities, even low levels of particulate matter, sulphur dioxide, nitrogen dioxide and carbon monoxide can negatively impact our health.

As Vancouver grows we create more and more air pollution through exhaust from trucks, buses, ships, trains, planes, and industrial operations. It will take work to improve our air quality.





BASELINE NUMBERS

Metro Vancouver is responsible for air quality planning, monitoring, and management within the region, and has two monitoring stations in the City of Vancouver—one in Kitsilanoand one at Robson Square in the downtown core.

Vancouver has cleaner air than we did 20 years ago. However, our air quality does not always meet the Greenest City 2020 target. Achieving the Clean Air target will require working in partnership with Metro Vancouver and other levels of government, businesses, non-profit organizations, and residents.

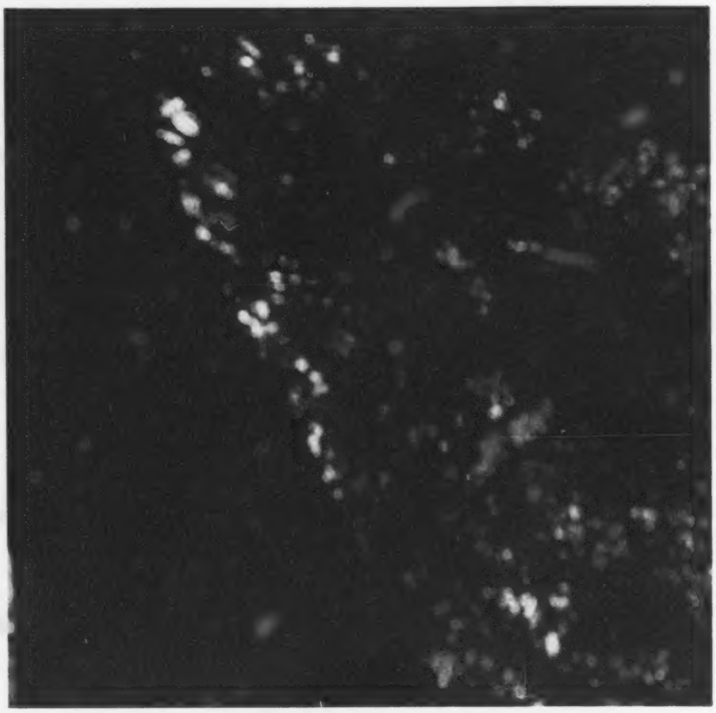
GREEN JOBS

- GHG emissions auditor
- air quality modeller
- marine charging station manufacturer and installer
- vehicle charging station manufacturer and installer
- electric vehicle mechanic
- environmental service provider
- air quality tester
- policy analyst and researcher
- educator

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Clean Air actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Encourage electric vehicle transport.* This action connects to the Green Transportation plan. The increased use of vehicles such as electric cars, which do not burn fossil fuels, improves air quality and reduces greenhouse gas emissions.
2. *Regulate uncontrolled wood-burning appliances for residential buildings.* Metro Vancouver is leading the way on this issue, and the City of Vancouver is working closely with Metro to design and implement their new policies and programs.
3. *Establish a framework to integrate air quality considerations into City of Vancouver planning.*
4. *Collaborate with Port Metro Vancouver, Metro Vancouver, and BC Hydro on joint air quality issues.*



KEY STRATEGIES TO 2020

Encourage cleaner modes of transportation

This strategy, which involves motor vehicles and non-road diesel engines, will have the largest impact on air quality. It is closely connected to the Green Transportation section of the GCAP. Some of the actions include: establishing charging and fuelling infrastructure for zero-emission electric and low-emission vehicles, and increasing the use of electrical shore power for ocean vessels using Vancouver's port.

Reduce wood smoke from home wood-burning appliances

The improper operation of wood-burning appliances generates excessive smoke and fine particulate matter, which can cause a range of health concerns. Metro Vancouver plays a large role in this area and is part of a regional Wood Stove Exchange Program in which residents are able to receive funding to update their appliances. The City of Vancouver and Metro Vancouver are exploring a range of bylaws and regulatory options to reduce exposure to wood smoke from residences.

Enhance air quality assessment and planning

Children, seniors, pregnant women, and people with pre-existing lung and heart conditions are particularly vulnerable to poor air quality. The City will work with its partners to consider these issues in land use planning. The City will increase its understanding of the role of air quality monitoring and computer modelling as they relate to future projects like district energy systems, separated bike lanes, and large redevelopments.

Reduce marine vessel emissions while in port

Marine vessels are the major source of sulphur dioxide in our air. One of the most effective ways to protect Vancouver residents and visitors from exposure to marine engine emissions is to install electrical shore power so that vessels do not have to idle their engines while docked.

Develop a strategy to address volatile organic compounds (VOCs)

VOCs create the strong smells associated with paints, solvents, and cleaners. These pollutants are important to address because they contribute to ground-level ozone and fine particulates in our air, both of which can cause health problems.

WHAT IT'S GOING TO TAKE TO GET THERE

The Clean Air goal is closely linked with the Green Transportation goal as many transportation strategies will have significant positive effects on air quality in Vancouver and the region. There are also links with Climate Leadership and some other important planning initiatives at the City like the Urban Health Strategy. The City of Vancouver will work closely with Metro Vancouver and many other stakeholders to achieve this target.

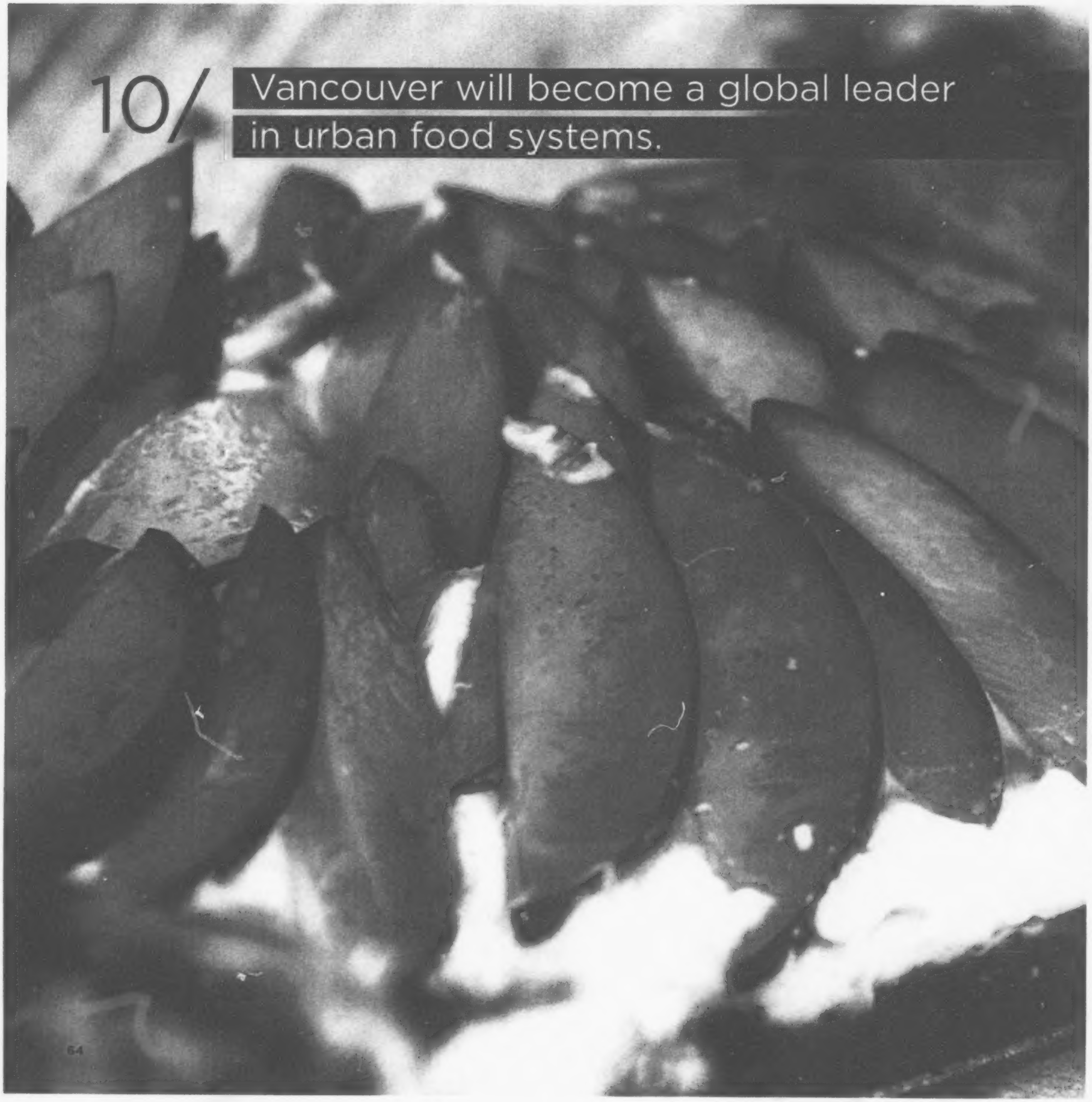
EMITTER	POLLUTANTS	RESPONSIBLE JURISDICTION
MARINE VESSELS	Sulphur Dioxide Nitrogen Dioxide Particulate Matter	Environment Canada Port Metro Vancouver
LIGHT DUTY VEHICLES	Nitrogen Dioxide Ground-Level Ozone	Metro Vancouver City of Vancouver
NON-ROAD EQUIPMENT	Nitrogen Dioxide Particulate Matter Ground-Level Ozone	Metro Vancouver
RESIDENTIAL WOOD COMBUSTION	Particulate Matter	Metro Vancouver City of Vancouver
CONSUMER PRODUCTS	Ground-Level Ozone	Metro Vancouver

Clean air can be easy to take for granted, even though it has a huge impact on our health and well-being.

EMITTER	POLLUTANTS	RESPONSIBLE JURISDICTION
MARINE VESSELS	Sulphur Dioxide Nitrogen Dioxide Particulate Matter	Environment Canada Port Metro Vancouver
LIGHT DUTY VEHICLES	Nitrogen Dioxide Ground-Level Ozone	Metro Vancouver City of Vancouver
NON-ROAD EQUIPMENT	Nitrogen Dioxide Particulate Matter Ground-Level Ozone	Metro Vancouver
RESIDENTIAL WOOD COMBUSTION	Particulate Matter	Metro Vancouver City of Vancouver
CONSUMER PRODUCTS	Ground-Level Ozone	Metro Vancouver

Clean air can be easy to take for granted, even though it has a huge impact on our health and well-being.

10/ Vancouver will become a global leader in urban food systems.



LOCAL FOOD

TARGET:

INCREASE CITY-WIDE AND NEIGHBOURHOOD FOOD ASSETS BY A MINIMUM OF 50% OVER 2010 LEVELS.

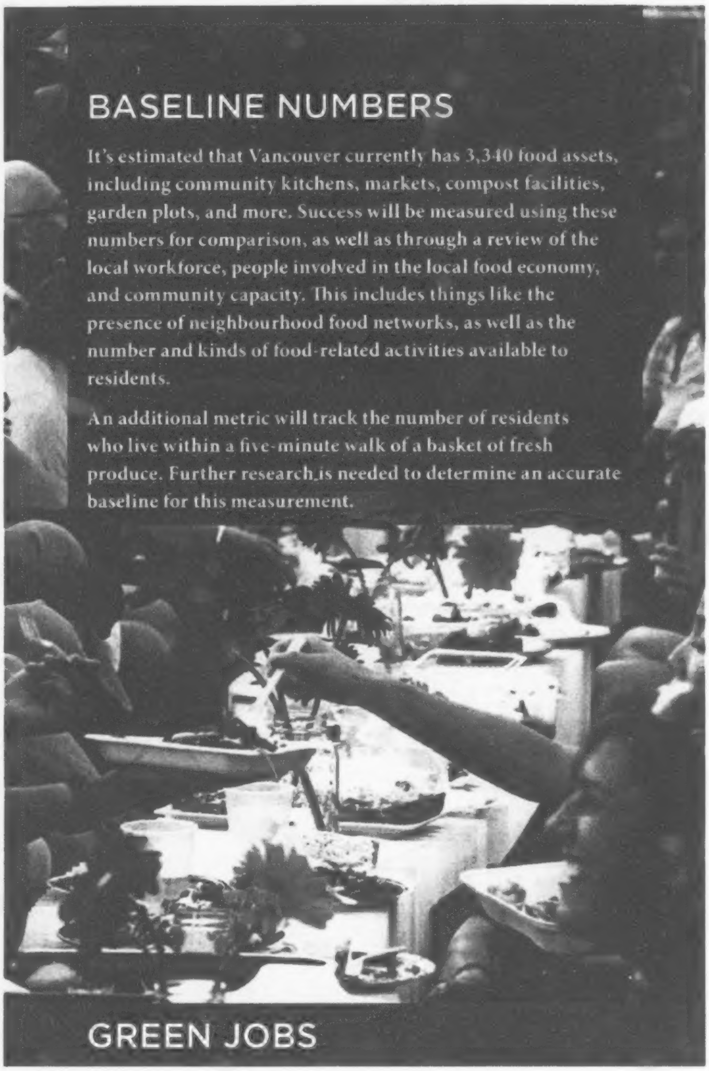
Food matters—like water and air, we can't live without it. What and how we eat can be a daily reminder of our interconnection with the earth's natural systems and with each other.

Food systems—the way we grow, process, transport, and consume food—have been central to the sustainability of communities for millennia. For example, the fossil fuels used to transport berries from South America, the energy used in cooling systems for food storage, and the amount of land used to graze animals and produce meat and dairy products all consume resources and produce waste. In fact, food represents one of the largest sources of our greenhouse gas emissions. It also accounts for almost half of our ecological footprint if you extend emission calculations to include factors related to food.

There is no single definition of "local food." In this plan, however, "local" means that the distance from farm to plate is as short as possible. The City of Vancouver's definition of local also includes factors such as the working conditions of the people who grow and harvest the food, the environmental impact of the food's production including the use of pesticides, and the affordability or accessibility of food for all residents.

A stronger local food system reduces the size of our ecological footprint by cutting down on the use of fossil fuels as well as protecting food-producing lands and related biodiversity. Local food contributes to human health and is considered by the Vancouver Economic Commission as a growing sector of a strong green economy.

All of these factors make food a powerful part of a just and sustainable city.



BASELINE NUMBERS

It's estimated that Vancouver currently has 3,340 food assets, including community kitchens, markets, compost facilities, garden plots, and more. Success will be measured using these numbers for comparison, as well as through a review of the local workforce, people involved in the local food economy, and community capacity. This includes things like the presence of neighbourhood food networks, as well as the number and kinds of food-related activities available to residents.

An additional metric will track the number of residents who live within a five-minute walk of a basket of fresh produce. Further research is needed to determine an accurate baseline for this measurement.

GREEN JOBS

- urban farmer
- urban beekeeper
- farmers market coordinator
- commercial food recovery coordinator
- community kitchen operator
- food processor
- horticulturalist
- food retailer
- policy analyst and researcher
- educator

Food asset growth

FOOD ASSET	CURRENT	2020 GOAL	PER CENT INCREASE
Community Kitchen	69	100	45%
Farmers Market	4	22	450%
Community Produce Stand	3	15	400%
Community Food Composting Facilities	0	5	500%
Community Garden Plots	3,260	5,000	53%
Urban Orchards	3	10	330%
Urban Farms	1	5	400%
Food Hub	0	1	100%
Total	3,340	5,158	54.4%

HIGHEST PRIORITY ACTIONS

The following are the highest priority actions for 2011–2014. The complete list of Local Food actions can be found in the *Greenest City 2020 Action Plan* available at **talkgreenvancouver.ca**

1. *Develop a draft municipal food strategy to coordinate all aspects of the food system.* There are many players involved in Vancouver's local food movement. This action aims to create linkages across City departments and to the Vancouver Food Policy Council, community partners, and other programs so that their efforts can strengthen one another and help us move more effectively toward the 2020 target.
2. *Grow more food in the city.* An increase in urban agriculture will include five to six new community gardens plus one new urban farm per year over the next three years. This also includes a plan to expand the number of farmers markets within the city. In all cases, the City will work with the Park Board, neighbourhoods, and landowners to determine the location and process for implementation of these resources.
3. *Make local food available in community centres, parks, neighbourhood houses, and other City-run facilities through a local food procurement plan.* The City can use its significant purchasing power to buy just, sustainable, and locally produced food products. Examples could include produce from local farms and baked goods from local producers.

KEY STRATEGIES TO 2020

Develop a coordinated municipal food strategy

This strategy focuses on the importance of working across City departments and with community partners to articulate a vision, as well as goals, and actions for Vancouver's food system. A food strategy will provide a framework for an integrated approach to planning food policy and actions.

This goal cannot be achieved without a coordinated collaborative approach that takes into account the big picture and uses the talents of all involved. Some ideas that may be explored in this strategy include: zoning to protect food-growing spaces, the appropriate placement and licensing of urban farms, and amended bylaws to better facilitate food production and community produce stands.

Support the creation of food infrastructure and food-related green jobs in production, processing, storage, distribution, and waste management

A sustainable urban food system is not possible without the infrastructure—the land, people, and buildings—to make it happen. Some actions in this strategy include: a food-related incubator to assist the development of local food businesses, and a central food hub that can provide space for the assembly, storage, and distribution of food from local farms and the processing and development of local food products.

Increase access to information on just and sustainable local food

There are many excellent food projects happening in Vancouver, but not enough opportunities to share knowledge and build connections with the wider community. A possible action is to create a directory of key local food initiatives as well as annual events that support and celebrate local food.

Ensure that Vancouver's neighbourhoods have equal access to healthy, local food

Resilient neighbourhood food systems mean that residents have access to fresh produce, to a community kitchen, or to a network of people who can help start and support projects. Some actions include: increasing the number of neighbourhood food networks that provide information and resources to residents, working to ensure all residents are within a five-minute walk of a basket of fresh produce, and encouraging programs that either use or compost excess food from commercial operations.

Advocate for food issues at regional, provincial, and national levels

Despite an increase in local food assets, Vancouver will continue to have a strong dependence on food grown outside city boundaries. The regulations and policies of other levels of government can work together to further efforts to implement local food actions and strategies. Some of the actions include: continuing to advocate for food-growing capacity in the Lower Mainland's Agricultural Land Reserve (ALR) and other areas, and collaborating with the Vancouver School Board to ensure school breakfast and lunch programs receive adequate funding.

WHAT IT'S GOING TO TAKE TO GET THERE

As with many Greenest City goals, strong partnerships are necessary for success. From Vancouver's Food Policy Council to local food producers, from regional and provincial governments to neighbourhood groups, there is a place in this plan for everyone to play a role. Fortunately, Vancouver has a strong and growing community of people working for a local, sustainable, and just food system. This is a foundation we can build on as we make progress towards our 2020 goal.

WHO GETS TO EAT FRESH?

Some Vancouverites have an easier time than others finding a place in their neighbourhood to buy fresh fruits and vegetables. Access to fresh produce is not distributed equally across the city. One of the priorities in the Local Food plan is to ensure that the majority of residents live within a five-minute walk of a basket of fresh produce. This is in contrast to a corner store that might only carry chips or other packaged food. There are a number of areas in Vancouver where access is well outside a five-minute walk. While specific measurement requires further definition, work can begin to address the identified gaps.

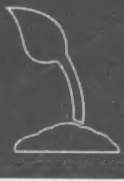
WE'RE NOT STARTING FROM SCRATCH!

Samples from Vancouver's food system history

- Food Policy Council created in 2004
- Bylaw changes in 2005 encourage hobby beekeeping
- Vancouver's 2007 Food Charter underpins the goals of a just and sustainable food system
- Bylaw changes in 2010 allow for backyard hens
- The 2010 by 2010 Challenge increases the number of community gardens and orchards
- Curbside food scraps pickup begins in 2010 and diverts waste from the landfill

The City is working on several sets of local food-related guidelines and programs that will benefit from the Greenest City Action Plan. These include:

- Development of a Vancouver Food Strategy
- Revised Beekeeping Guidelines
- Edible Landscaping Guidelines



FOOD SECURITY SPROUTS UP ACROSS THE CITY

The Renfrew Collingwood Neighbourhood House creates educational workshops and community kitchens. They do this in partnership with local early childhood education centres to increase access to healthy food for culturally diverse, low-income community members.

The Renfrew Collingwood Food Security Institute has increased leadership and training opportunities for residents and has enhanced social support networks among low-income and culturally diverse populations—all through food sharing, organic growing, nutrition education and more.

The Britannia Urban Gardens Project developed a food gardening program at Britannia Secondary in response to interest within the school and wider community. The project has helped to reconnect participants to the land and to the food they eat, supported healthy eating choices, and fostered leadership development. It also fostered stronger partnerships between the Britannia Community Centre, the school, and the wider community.

NEIGHBOURHOOD FOOD NETWORKS—COMING TO A COMMUNITY NEAR YOU

Neighbourhood Food Networks (NFNs) are coalitions of community members, community organizations, agencies, and businesses who collaborate to achieve food system goals. Actions include monthly potlucks, community kitchens, coordinating community produce stands, organizing skills-building events like gardening and seed-saving workshops, and more.

There are a growing number of NFNs currently operating in the City of Vancouver, including five that were funded through the Greenest City Neighbourhood Grants program (2010) and Social Responsibility Fund (2011). Vancouver aims to ensure that each neighbourhood is serviced by an adequately resourced NFN. Depending on need, this may or may not mean a NFN in each local area. It could also involve a coordinating body to assist their development.

$AVE-ON-MEAT$
Est. 1957

Q: WHAT IS A FOOD ASSET?

A: RESOURCES, FACILITIES, SERVICES OR SPACES THAT STRENGTHEN THE CITY'S FOOD SYSTEM.

Some examples include:

- Neighbourhood food hubs that are centres for education and skill building on topics such as gardening, composting, and food preservation
- Community kitchens
- Farmers markets
- Community produce stands (these are mini-markets that provide vulnerable populations with access to fresh food)
- Food scraps composting facilities and programs
- Community garden plots
- Urban orchards
- Urban farms (these are areas of land in the city used to grow food that is sold to residents or retailers)

Under the *Greenest City 2020 Action Plan*, the number of food assets would increase by 54% from an estimated 3,340 to 5,158 by 2020.

A CONCLUSION & A BEGINNING

When you imagine yourself in the year 2020, what do you see? What do you hope for? What are the opportunities? These are the kinds of questions we asked as we set out to create the *Greenest City 2020 Action Plan.*

Along the way, we talked with as many people as possible from experts who teach and research in universities to business owners and students, industry leaders and concerned citizens. Through public consultation more than 35,000 people contributed in some way to the document you now hold in your hands.

Together we created not just a vision, but also a realistic and measurable path to get there. City staff are working on implementing actions in the plan that fall within the City's jurisdiction. As citizens, we all play a role in ensuring the 10 goals are achieved.

Indeed, the *Greenest City 2020 Action Plan* has a role for everyone in Vancouver. Whether you're involved in the local business community, active in your neighbourhood, or interested in greening your own home, your efforts are essential to our shared success. If you're not already involved, we hope you will join us.

ACKNOWLEDGEMENTS

The *Greenest City 2020 Action Plan* is the culmination of countless hours of work, as well as invaluable expertise, leadership and creativity offered by hundreds of organizations and thousands of individuals.

It is with great appreciation that we recognize all who are playing a role in building a bright green future for our city and our planet.

Greenest City Planning Team

- Lindsay Cole, *Greenest City Planner, Sustainability Group*
- Amanda Mitchell, *Greenest City Public Engagement Coordinator, Sustainability Group*
- Olive Dempsey, *Greenest City Public Engagement Coordinator, Sustainability Group*
- Amy Fournier, *Project Analyst, Sustainability Group*
- Ryan Merkeley, *Director of Corporate Communications*
- Lisa Brideau, *Sustainability Specialist, Sustainability Group*

Greenest City Steering Committee

- Sadhu Johnston *(Chair), Deputy City Manager*
- Lee Malleau, *CEO, Vancouver Economic Commission*
- John Tylee, *Director of Policy and Research, Vancouver Economic Commission*
- Sean Pander, *Assistant Director, Sustainability Group*
- David Ramslie, *Senior Programs Manager, Sustainability Group*
- Will Johnston, *Chief Building Official*
- Jerry Dobrovolny, *Director of Transportation*
- Brent Toderian, *Director of Planning*
- Peter Kuran, *Deputy General Manager, Park Board*
- Tilo Driessen, *Manager of Planning and Research, Park Board*
- Neal Carley, *Director of Streets*
- Danica Djurkovic, *Acting Director of Planning and Operations, Park Board*
- Rowan Birch, *Director of Waste Reduction and Recovery Management*
- Chris Underwood, *Acting Director of Waste Reduction and Recovery Management*
- Mairi Welman, *Director of Corporate Communications*
- Brian Crowe, *Director of Water and Sewers*
- Mary Clare Zak, *Director of Social Policy*
- Amanda Pitre-Hayes, *Director of Sustainability*

GREENEST CITY ACTION TEAM

- Gregor Robertson (Co-Chair), *Mayor of Vancouver*
- Dr. David Boyd (Co-Chair), *Environmental Lawyer and author of Sustainability Within a Generation*
- David Cadman, *Vancouver City Councillor*
- Linda Coady, *Distinguished Fellow, Liu Institute for Global Issues, UBC*
- Lindsay Cole, *Director, Sustainability Solutions Group*
- Karen Cooling, *National Staff Representative, Communications, Energy and Paperworkers Union of Canada and Treasurer, Toxic Free Canada*
- Mike Harcourt, *Former Premier of British Columbia, Former Mayor of Vancouver, Honorary Chair of the International Centre for Sustainable Cities*
- Cheeying Ho, *Director, Whistler Centre for Sustainability*
- Mark Holland, *Principal, HB Lanarc*
- Alex Lau, *Vice President, Golden Properties Ltd.*
- Linda Nowlan, *Director, Pacific Conservation, World Wildlife Fund-Canada*
- Gordon Price, *Director of SFU City Program and former Vancouver City Councillor*
- Moura Quayle, *Professor,* UBC *Sauder School of Business*
- Andrea Reimer, *Vancouver City Councillor*
- Robert Safrata, *CEO, Novex Delivery Solutions*
- Dr. David Suzuki, *Scientist, environmentalist and broadcaster*
- Mossadiq S. Umedaly, *Executive Chairman, Enecsys*
- Tamara Vrooman, CEO, *Vancity Credit Union*

STAFF WORKING GROUPS

Green Economy

- John Tylee (Chair), *Director of Policy and Research, Vancouver Economic Commission*
- Juvarya Warsi (Staff Lead), *Policy Analyst, Vancouver Economic Commission*
- Chris Clibbon, *Planner, Community Services Group, Research and Data*
- Kira Gerwing, *Planner, Community Services Group (Downtown Eastside)*
- Lee Malleau, *CEO, Vancouver Economic Commission*
- Bryan Buggey, *Director of Business Development, Vancouver Economic Commission*
- Jonathan Kassian, *Vancouver Economic Commission*
- John McPherson, *Business Development Officer, Vancouver Economic Commission*
- Peter Vaisbord, *Planner, Business Improvement Area (BIA) Program*
- Abhijeet Jagtap, *UBC Greenest City Scholar*
- Nouri Najjar, *UBC Greenest City Scholar*

Climate Leadership

- Sean Pander (Chair), *Assistant Director, Sustainability Group*
- Hugo Haley (Staff Lead), *Renewable Energy Planner, Sustainability Group*

NOTE: TITLES AND ROLES MAY HAVE CHANGED SINCE THE DEVELOPMENT OF THE GREENEST CITY ACTION PLAN

- **Chris Baber,** *Utility Manager, Neighbourhood Energy Utility Project, Engineering Services*
- **David Ramslie,** *Senior Programs Manager, Sustainability Group*
- **Brian Beck,** *Climate Program Manager, Sustainability Group*
- **Brian Crowe,** *Director of Water and Sewers Division*
- **Tamsin Mills,** *Climate Change Adaptation Planner*
- **Paul Henderson,** *Director, Strategic Initiatives Office of the General Manager - Engineering*
- **Malcolm Shield,** *UBC Greenest City Scholar*
- **Derek Pope,** *UBC Greenest City Scholar*
- **Lisa Westerhoff,** *UBC Greenest City Scholar*

Green Buildings

- **Will Johnston (Chair),** *Director of Licences and Inspections/Chief Building Official*
- **David Ramslie,** *Senior Programs Manager, Sustainability Group*
- **Rick Michaels,** *Assistant Director, Enquiry Centre - Development Services*
- **Ron Dyck,** *Program Manager, Building Inspections*
- **Sailen Black,** *Development Planner, Urban Design and Development Planning Centre*
- **Mark Hartman,** *Green Building Program Manager, Sustainability Group*
- **Rachel Moscovich,** *Sustainable Development Planner, Sustainability Group*
- **Kandiah Pavananthan,** *Manager, Development Services - Processing Centre*
- **Pat Ryan,** *Deputy Chief Building Official, Assistant Director of Development Services*
- **Chris Warren,** *Director of Development Services*
- **Jay Worthing,** *UBC Greenest City Scholar*

Green Transportation

- **Jerry Dobrovolny (Chair),** *Director of Transportation*
- **Brent Toderian (Chair),** *Director of Planning*
- **Paul Krueger (Staff Lead),** *Planner, Strategic Transportation Planning Branch - Rapid Transit Office*
- **Brian Beck,** *Climate Program Manager, Sustainability Group*
- **Dale Bracewell,** *Manager, Transportation Division - Active Transportation*
- **Lon LaClaire,** *Manager, Strategic Transportation Planning*
- **Neal LaMontagne,** *Planner, Citywide and Regional Planning*
- **Andrew Pask,** *Planner, Community Planning*
- **Jo Fung,** *Program Manager, Transportation Division*
- **Maggie Baynham,** *UBC Greenest City Scholar*
- **Tate White,** *UBC Greenest City Scholar*

Zero Waste

- **Rowan Birch (Chair, retired),** *Director of Waste Reduction and Recovery Management*
- **Chris Underwood (Chair/Staff Lead),** *Acting Director, Waste Reduction and Recovery Management*
- **Monica Kosmak,** *Program Manager, Zero Waste Planning*
- **Lynn Belanger,** *Manager, Transfer and Landfill Operations*
- **Mani Deo,** *Equipment Management Engineer*
- **David Robertson,** *Supervisor, Environmental Protection Branch, Community Services Group*
- **Catherine Kinahan,** *Assistant Director of Enforcement and Prosecutions, Legal Services*
- **Valery Presolly,** *UBC Greenest City Scholar*

Access to Nature

- **Tilo Driessen (Chair),** *Manager of Planning and Research, Park Board*
- **Neal Carley (Chair),** *Director of Streets*
- **Alan Duncan (Staff Lead),** *Environmental Planner, Planning and Operations, Park Board*
- **Eileen Curran,** *Engineering Assistant, Streets Division*
- **Doug Manarin,** *Planning and Development Engineer, Streets Design*
- **Douglas Scott,** *Landscape Architect, Active Transportation*
- **Megan Stuart-Stubbs,** *Planning Analyst, Planning and Operations, Park Board*
- **Cathy Buckham,** *Senior Planner, Community Planning*
- **Andrew Pask,** *Planner, Community Planning*
- **Katherine Isaac,** *Planner, Planning and Operations, Park Board*
- **Ben Mulhall,** *Project Coordinator, Planning and Operations, Park Board*
- **Bill Stephen,** *Acting City Arbourist, Park Board*
- **Piet Rutgers (retired),** *Park Board*
- **Amit Gandha,** *Acting Superintendent - Arboriculture North, Park Board*
- **Lindsay Bourque,** *UBC Greenest City Scholar*

Lighter Footprint

- **Mairi Welman (Chair),** *Director of Corporate Communications*
- **Lindsay Cole (Staff Lead),** *Greenest City Planner, Sustainability Group*
- **Sean Pander,** *Assistant Director, Sustainability Group*
- **Joyce Uyesugi,** *Planner, Citywide and Regional Planning*
- **Brenda Prosken,** *Deputy General Manager, Community Services*
- **Andrew Pask,** *Planner, Community Planning*
- **Colin Fenby,** *Assistant Director of Corporate Communications*
- **Nancy Eng,** *Communications Coordinator, Corporate Communications*
- **Baldwin Wong,** *Social Planner, Community Services Group*
- **Joseph Li,** *Multilingual Communications Coordinator, Corporate Communications*
- **Daphne Wood,** *Director of Planning and Development - Vancouver Public Library*
- **Barb Floden,** *Communications - Park Board*
- **Laurie Best,** *Director of Web Redevelopment Project*

NOTE: TITLES AND ROLES MAY HAVE CHANGED SINCE THE DEVELOPMENT OF THE GREENEST CITY ACTION PLAN

- Jennifer Bailey, *Water Quality and Conservation Program Manager, Water Designs*
- Amy Fournier, *Project Analyst, Sustainability Group*
- Paul Henderson, *Director, Strategic Initiatives Office of the General Manager – Engineering*
- Cornelia Sussman, *UBC Greenest City Scholar*
- Avery Titchkosky, *UBC Greenest City Scholar*
- Maggie Wang, *UBC Greenest City Scholar*
- Polly Ng, *UBC Greenest City Scholar*

Clean Water

- Brian Crowe (Chair), *Director of Water and Sewers Division*
- Peter Navratil (Staff Lead), *Manager, Water Design*
- Andrew Ling, *Civil Engineer, Sewer and Drainage Design*
- Carolyn Drugge, *Policy Analyst, Water and Sewers Division*
- Piet Rutgers/Danica Djurkovi, *Acting Director of Planning and Operations, Park Board*
- David Ramslie, *Senior Programs Manager, Sustainability Group*
- Grace Cheng, *Manager, Financial Policy and Projects*
- Jack Chen, *Business Consultant, Financial Services Group*
- Jennifer Bailey, *Water Quality and Conservation Program Manager, Water Design*
- Donny Wong, *Civil Engineer, Water Design*
- Sara Orchard, *UBC Greenest City Scholar*
- Joshua Welsh, *UBC Greenest City Scholar*

Clean Air

- Roger Quan, *Air Quality Policy and Management Division Manager, Metro Vancouver*
- Laurie Bates-Frymal, *Air Quality Planner, Metro Vancouver*
- Derek Jennejohn, *Senior Engineer, Metro Vancouver*
- Sean Pander, *Assistant Director of Sustainability Group*
- Brian Beck, *Climate Program Manager, Sustainability Group*
- Malcolm Shield, *Climate Policy Analyst, Sustainability Group*
- Adam Hyslop, *UBC Greenest City Scholar*

Local Food

- Mary Clare Zak (Chair), *Director of Social Policy*
- Andrew Pask (Staff Lead), *Planner, Community Planning*
- James O'Neill (Staff Lead), *Social Planner, Community Services Group*
- Wendy Mendes, *Social Planner, Community Services Group*
- Brent Toderian, *Director of Planning*
- Tami Gill, *Planner, Central Area Planning*
- Rick Michaels, *Assistant Director of Development Services Enquiry Centre*
- Sean Pander, *Assistant Director of Sustainability Group*
- John Breckner, *Associate Director of Real Estate Services*
- Scott Edwards, *Manager, Street Activities Branch*
- Erin McDonald, *Green Streets Coordinator, Transportation*
- Alan Duncan, *Environmental Planner, Planning and Operations, Park Board*
- Bill Manning, *Manager, Arboriculture and Horticulture*
- Douglas Scott, *Landscape Architect, Active Transportation*
- Kevin Millsip, *Sustainability Coordinator, Vancouver School Board*
- Liane McKenna (retired), *Director of Vancouver East District, Park Board*
- Tegan Adams, *UBC Greenest City Scholar*

EXTERNAL ADVISORY COMMITTEES

Green Economy

Target 1

- Richard Hallman, *BC Innovation Council*
- Jennie Moore, *BC Institute of Technology*
- Robin Hemmingsen, *BC Institute of Technology*
- Pascal Spothelfer, *BC Technology Industry Association*
- Lee Loftus, *BC and Yukon Construction Trades Council*
- Wayne Peppard, *BC and Yukon Construction Trades Council*
- Michael Heeney, *Bing Thom Architects*
- Shirley Chan, *Building Opportunities with Business*
- Brian Smith, *Building Opportunities with Business*
- Wal van Lierop, *Chrysalix*
- John Lerner, *EMBERS*
- Marcia Nozick, *EMBERS*
- Paul Shorthouse, *Globe Foundation*
- Mark Holland, *HB Lanarc*
- Bob Ingratta, *LifeSciences BC*
- Helen Goodland, *Light House Sustainable Building Centre*
- Gil Yaron, *Light House Sustainable Building Centre*
- Linda Nowlan, *Environmental Lawyer and Consultant*
- Lori Law, *National Research Council - IRAP*
- Walter Wardrop, *National Research Council - IRAP*
- Linda Oglov, *Oglov Business Development*
- Heather Tremain, *reSource Rethinking Building*
- Paul Austin, *Sustainable Development Technology Canada*
- Sean Markey, *Simon Fraser University*
- James Tansey, *University of British Columbia*
- Maureen Cureton, *Vancity Credit Union*

Target 2

- Gordon Hardwick, *BC Film Commission*
- Christy Intihar, *BC Hydro PowerSmart*
- Joy Beauchamp, *BC Government LiveSmart*
- Bernie Magnan, *Board of Trade*
- Catherine Chick, *Business Development Bank of Canada*
- Elizabeth Sheehan, *Climate Smart*
- Charles Gauthier, *Downtown Vancouver Business Improvement Association*
- Wes Regan, *Hastings Crossing Business Improvement Association*
- Sophie Agbonkhese, *Strathcona Business Improvement Association*
- Walt Judas, *Tourism Vancouver*
- Michael Krafczyk, *TransLink*
- Maureen Cureton, *Vancity Credit Union*
- Lorina Keery, *Building Owners and Managers Association BC*

Climate Leadership

- Eve Hou, *Metro Vancouver*
- Josha MacNab, *Pembina Institute*
- Dale Littlejohn, *Community Energy Association*
- Guy Dauncey, *BC Sustainable Energy Association*
- John Robinson, *University of British Columbia*
- Stephen Sheppard, *University of British Columbia*
- Kevin Millsip, *Vancouver School Board*
- Mark Roseland, *Simon Fraser University*
- Nicholas Heap, *David Suzuki Foundation*
- Norm Connolly, *Community Energy Association*
- Stacey Bernier, *Canadian District Energy Association*
- Victoria Smith, *BC Hydro*
- Colleen Sparks, *BC Climate Action Secretariat*
- Paul Shorthouse, *Globe Foundation*
- Alan Boniface, *Urban Land Institute*
- Mauricio A. Acosta, *Vancouver Coastal Health Authority*
- Elizabeth Sheehan, *Climate Smart*
- John Turner, *Fortis BC*

Green Buildings

- Allan Francis, *Architectural Institute of BC, Sustainability Committee*
- Michael Blackman, *Association of Professional Engineers and Geoscientists / Read Jones Christoffersen Ltd.*
- Chris Corps, *Asset Strategies Ltd. / Canadian Royal Institute of Chartered Surveyors*
- Toby Lau, *BC Hydro*
- Sophie Mercier, *BC Building Envelope Council*
- John Cordonier, *Bentall Group*
- Lorina Keery, *Energy Conservation and Sustainability Programs, Building Owners and Managers Association of BC*
- Paul LaBranche, *Building Owners and Managers Association of BC*
- Peter Laforest, *Energy and Sustainability Programs, Building Owners and Managers Association of BC*
- Teresa Coady, *Bunting Coady Architects*
- Martin Nielsen, *Busby, Perkins + Will*
- Joe Stano, *Canada Green Building Council*
- Thomas Mueller, *Canada Green Building Council*
- Jessica Woolliams, *Cascadia Green Building Council*
- Joel Sisolak, *Cascadia Green Building Council*
- Mona Lemoine, *Cascadia Green Building Council*
- Allan Francis, *CEI Architecture Planning Interiors*
- John Scott, *CEI Architecture Planning Interiors*
- Kevin Hydes, *CEO Integral Group*
- Jennifer Sanguinetti, *Smart Buildings and Energy Management BC Housing*
- Jennie Moore, *BC Institute of Technology*
- Jeff Fischer, *Urban Development Institute*
- Amy Spencer-Chubey, *Greater Vancouver Home Builders' Association*
- Denisa Ionescu, *Research and Education, Homeowner Protection Office*
- Murray Mackinnon, *Canadian Contact, Ledcore*
- Helen Goodland, *Light House Sustainable Building Centre*
- Trudy Rotgans, *Building Policy, Province of BC*
- Norm Shearing, *Parklane Homes*
- Guido Wimmers, *Passive House Institute*
- Jonathan Meads, *Concert Properties*
- Katherine Muncaster, *Province of BC*
- Graham Finch, *RDH Building Engineering*
- Warren Knowles, *RDH Building Engineering*
- Brenda Martens, *Recollective*
- Michael Yeates, *Vancity Credit Union*
- Heather Tremain, *reSource Rethinking Building*
- Lyn Bartram, *SFU School of Interactive Arts and Technology*
- Ray Cole, *UBC School of Architecture and Landscape Architecture*
- Juvarya Warsi, *Vancouver Economic Commission*
- Keith Sashaw, *Vancouver Regional Construction Association*

Green Transportation

- Kevin Volk, *BC Ministry of Transportation*
- Raymond Kan/Eve Hou, *Metro Vancouver*
- Greg Yeomans, *TransLink*
- Magaret Mahan, *Better Environmentally Sound Transportation*
- Keith Ippel, *Vancouver Area Cycling Coalition*
- Karen Parusel/Karen Fung, *Vancouver Public Space Network*
- Adam Cooper, *UBC TREK Program Centre, UBC*
- Larry Frank/Andrew Devlin, *School of Community and Regional Planning, UBC*
- Gordon Price, *City Program, SFU*
- Kevin Millsip, *Vancouver School Board*

NOTE: TITLES AND ROLES MAY HAVE CHANGED SINCE THE DEVELOPMENT OF THE GREENEST CITY ACTION PLAN

- Alice Miro, *CLASP Initiative, Built Environment and Health, Heart and Stroke Foundation*
- Heather McKay/Sara Lusina/Azaria Botta, *Vancouver Coastal Health*
- David Feldhaus, *Vancouver Electric Vehicle Association*
- Mike Elwood, *Electric Mobility Canada*

Zero Waste

- Ruth Abramson, *Provincial Health Services Authority*
- Helen Spiegelman, *Zero Waste Vancouver*
- Dennis Ranahan, *Metro Vancouver*
- Norman Point, *Musqueam Indian Band, Musqueam Reserve*
- Charles Gauthier, *Downtown Vancouver Business Improvement Association*
- Kevin Millsip, *Vancouver School Board*
- Richard Taki, *Vancouver Coastal Health Authority*
- Brock Macdonald/Jordan Best, *Recycling Council of BC*
- Avtar Sundher, *Ministry of the Environment*
- Sam Dahabieh, *Simon Fraser University*
- Robert Weatherbe, *Recycling Alternative*
- Louise Schwarz, *Recycling Alternative*

Access to Nature

- David Zandvliet, *Faculty of Education, Simon Fraser University*
- Emily Jubenvill, *Vancouver Public Space Network*
- Andrew Appleton, *Evergreen*
- Dawn Hanna, *Jericho Stewardship Group*
- Catherine Berris, *BC Society of Landscape Architects*
- Kai Chan, *Institute for Resources, Environment and Sustainability, UBC*
- Margaret Coutts, *Nature Vancouver*
- Kevin Millsip, *Vancouver School Board*
- Patricia Thompson, *Stanley Park Ecology Society*

Lighter Footprint

- Jennie Moore, *BC Institute of Technology*
- Jason Mogus, *Communicopia*
- James Boothroyd, *David Suzuki Foundation*
- Aftab Erfan, *Deep Democracy*
- Alex Lau, *Golden Properties*
- Nancy Mcharg, *Hoggan and Associates*
- Ruben Anderson, *Metro Vancouver*
- Vanessa Timmer, *One Earth Initiative*
- Emmanuel Prinet, *One Earth Initiative*
- Bill Rees, *One Earth Initiative/University of British Columbia*
- Janet Moore, *Semester in Dialogue Program, SFU*
- Meg Holden, *Urban Studies and Geography, SFU*
- Susanna Haas-Lyons, *Greenest City Conversations Project, UBC*
- Kevin Millsip, *Vancouver School Board*

Clean Water

- Oliver Brandes, *POLIS Projection Ecological Governance*
- Patricia Daly, *Vancouver Coastal Health Authority*
- Bob Jones, *Metro Vancouver*
- Dirk Kirste, *Simon Fraser University*
- Gunilla Oberg, *University of British Columbia*
- Kirk Stinchcombe, *Econnics*
- Tim Takaro, *Simon Fraser University*
- Troy Vassos, *NovaTech Consultants Inc.*
- Stan Woods, *Metro Vancouver*

Local Food

- Joanne Bays, *Public Health Association of British Columbia*
- Brent Mansfield, *Vancouver School Board*
- Doug Aason, *Greater Vancouver Foodbank*
- Daryl Arnold, *Commercial poultry farmer*
- Herb Barbolet, *Centre for Sustainable Community Development, SFU and Local Food First*
- Maria Burglehaus, *Vancouver Coastal Health Authority*
- Carole Christopher, *Society Promoting Environmental Conservation*
- Trish Kelly, *Horizon Distributors*
- André LaRivière, *Green Table Network*
- Tara McDonald, *Your Local Farmers Market Society*
- Ross Moster, *Village Vancouver*
- Jeff Nield, *Farm Folk City Folk*
- Cale Price, *Vancouver chef*
- Janine de la Salle, *Food Systems Planning, HB Lanarc*
- Carla S. Shore, *C-Shore Communications Inc.*
- Yona Sipos, *UBC Faculty of Land and Food Systems*
- Helen Spiegelman, *Zero Waste Vancouver*
- Kim Sutherland, *BC Ministry of Agriculture*
- David Tracey, *Vancouver Community Agriculture Network*
- T'Uy'Tanat-Cease Wyss, *Skwxw'u7mesh Nation*

GREENEST CITY WORKSHOP AND OUTREACH SUPPORTERS

- The Accountability Project
- Alfresco Vancouver
- Balitang Vancouver
- BC Sustainable Energy Association
- Board of Change
- Canadian Community Economic Development Network
- Cause + Affect and Pecha Kucha Vancouver
- City of Vancouver Bicycle Advisory Committee
- City of Vancouver Multicultural Advisory Committee
- Constructive Public Engagement
- David Suzuki Foundation
- Green Club Vancouver
- Green Drinks
- John Oliver Secondary School - Digital Immersion Class

NOTE: TITLES AND ROLES MAY HAVE CHANGED SINCE THE DEVELOPMENT OF THE GREENEST CITY ACTION PLAN

- OMNI news
- One Earth Initiative
- Poonam Sandhu and Preet Bal
- Prince of Wales Secondary School
- Rangi Changi Roots
- Recycling Council of BC
- Science World
- SFU Carbon Talks
- SFU City Program
- SFU Semester in Dialogue Program
- South Vancouver Service Providers Network
- Stratford Hall
- Strathcona Business Improvement Association
- S.U.C.C.E.S.S.
- Sustainable Vancouver
- Travelling World Community Film Festival
- UBC School of Community and Regional Planning
- Urban Development Institute
- Vancouver and District Labour Council
- Vancouver Board of Trade
- Vancouver City Planning Commission
- Vancouver Design Nerds
- Vancouver is Awesome
- Vancouver Public Space Network
- Vancouver Social Media community, hosted by SAP
- Village Vancouver
- The Waldorf Hotel
- Zero Waste Vancouver

PHOTO CREDITS

- Cover, Port Metro Vancouver
- Page 7, Stephen Hui
- Page 9, Kurtis Stewart
- Page 10, Vancouver Convention Centre
- Page 11, *Houses*, Amanda Mitchell
- Page 11, *Truck*, Westport Innovations
- Page 12, Rob Baxter
- Page 15, Westport Innovations
- Page 16, Amanda Mitchell
- Page 17, *Sign*, Amanda Mitchell
- Page 17, *VIVA Laneway*, Paul Krueger
- Page 21, Deb Gale
- Page 22, Amanda Mitchell
- Page 23, *Woodwards Building*, Amanda Mitchell
- Page 23, *Laneway House*, Krista Jahnke
- Page 24, *Greenwall*, Lisa Brideau
- Page 25, Amanda Mitchell
- Page 28, Kurtis Stewart
- Page 29, *Trucks*, Translink
- Page 30, Amanda Mitchell
- Page 33, Jason Vanderhill
- Page 34, Caelie Frampton
- Page 35, *OV Park*, Amanda Mitchell
- Page 35, *Wood Slats*, Amanda Mitchell
- Page 35, *Wood Wall*, Vanessa Griffiths
- Page 39, Amanda Mitchell
- Page 40, Rob Baxter
- Page 41, *Ducks*, Elaine Ayres
- Page 41, *Walking Path*, Ben Johnson
- Page 42, Vanessa Griffiths
- Page 46, Amanda Mitchell
- Page 47, *Bike Stand*, Paul Krueger
- Page 47, *Grass and Concrete*, Amanda Mitchell
- Page 48/49, *Canning*, Kristi Tatebe
- Page 49, *Laundry Line*, Ben Johnson
- Page 51, Amanda Mitchell
- Page 53, *Water Resevoir*, Metro Vancouver
- Page 53, *Carrot & Sprinkler*, Vanessa Griffiths
- Page 54, Stephen Rees
- Page 59, Paul Krueger
- Page 60, *Crab Park*, www.eclipseawards.com
- Page 60/61, *Leaf & Sun*, Vanessa Griffiths
- Page 64, *Peach Pie*, Michelle Sproule via scoutmagazine.ca
- Page 65, *Garden*, Kristi Tatebe
- Page 65, *Tomatoes*, Geoff Peters
- Page 66, Michelle Sproule via scoutmagazine.ca
- Page 69, Steve Dynie
- Page 70, Robert White

Environmental Benefits Statement

By using paper made with 100% post-consumer recycled content,
the following resources have been saved.

trees	water	energy	solid waste	greenhouse gases
36 fully grown	62,800 litres	15 million BTU	477 kilograms	1,672 kilograms

Environmental impact estimates were made using the Environmental Paper Network Calculator.
For more information visit http://calculator.environmentalpaper.org

© 2012, City of Vancouver. All Rights Reserved.

The preparation of this sustainable community plan was carried out with assistance from the Green Municipal Fund, a Fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.

CITY OF
VANCOUVER

GREENEST CITY 2020

For More Information:
Visit vancouver.ca or call: 311

Hoi chi tiêt
資料查詢

Obtenga Información
ਜਾਣਕਾਰੀ ਲਵੋ 311

TTY: 7-1-1 / Outside Vancouver: 604.873.7000

RECYCLED
Paper made from recycled material
FSC
www.fsc.org
FSC® C014956

zero 100% carbon neutral by Hemlock Printers
www.hemlock.com/zero

© CITY OF VANCOUVER 2012 11-125